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Volume 89, No. 8 — HAMILTON, ILLINOIS — August, 1949

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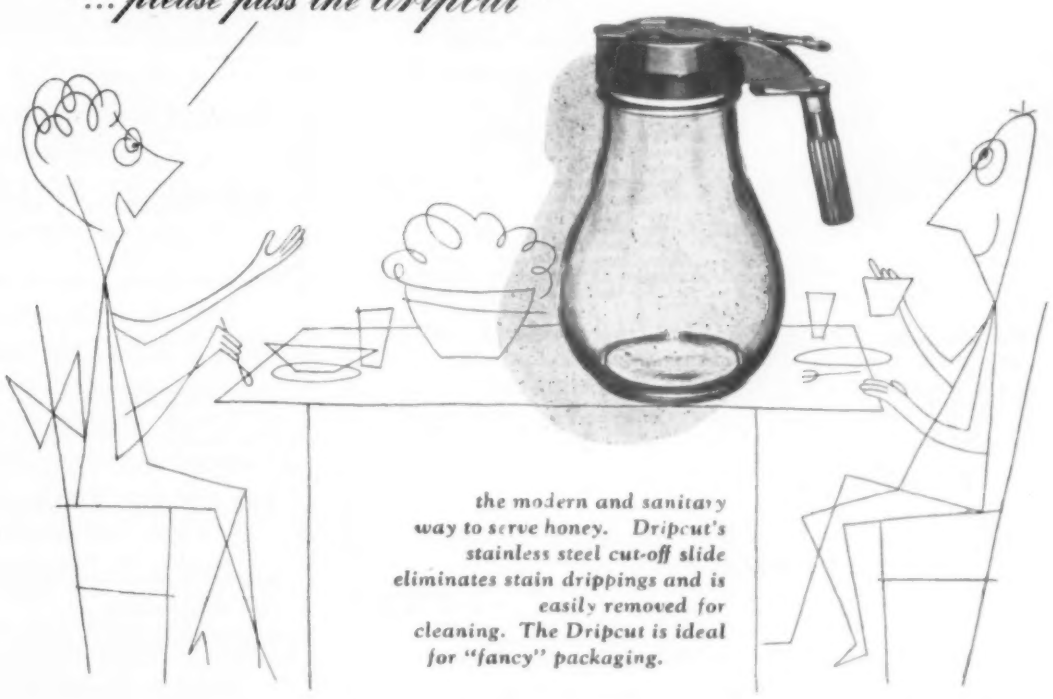

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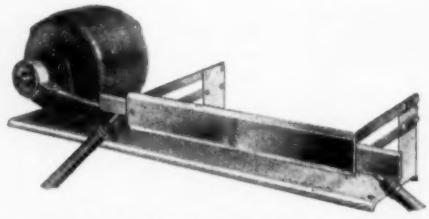

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• As We

How Will Honey Sell?

MANY PRODUCERS ARE ASKING ALready how we think that honey will sell in the succeeding ten months. It is a fact that there has been a tendency to "bear" the jobbing markets on account of the carry over of 1948 honey, but this has not succeeded to any extent in contracting for the new white crop just coming from the hives.

There are some conditions which should make for a more rosy situation in honey selling for the coming selling season. First is that finally most of the grocery shelf carry over of mediocre and high priced honey in glass has been disposed of and grocers are more inclined to buy; and to price what little they have left at a fair figure.

It is also possible that the drift away from honey so evident when sugar was decontrolled has now run its course and that the old user of honey is again coming back to it, in addition to the new user stimulated by various compaigns as well as the good work of the Honey Institute and the Federation.

We have also gotten off our "high horses" in insisting that war prices for our product would last indefinitely. It is only to be hoped that the other extreme is not reached, and it should not be with any reasonableness on the part of the producer.

Other favorable factors are that the small producer is definitely going out to sell his crop this year, or at least keep his local markets supplied if they are not already filled.

There has not been such a shift to cut comb, bulk comb and section honey as to glut these markets, in fact the South is already complaining about the lack of comb available for their bulk comb packs and packers are already "scrambling" for the available stocks.

While we are not market and price prognosticators, it just does look like a little more interest on the part of the producer to try to market, and on the part of the consumer to use may be of benefit in disposing of the 1949 crop. It is sure that the new crop also will be of better quality than it has been in recent years.

Fun or Work

AN ENGLISHMAN HAS SAID, "NOTHING is such hard work as fun. Nothing exhausts one so much as leisure." Many a man who has looked forward to retirement and a life of leisure has found this statement to be true. The change is all to the good to one who retires from one occupation and takes up another which is different and more interesting. The one who retires to a life of idleness will find his days dull and uninteresting.

In the old days before beekeeping came to be recognized as an occupation worthy of the full-time attention of an able-bodied man, the apiary was a very popular attraction to men of retirement age. Of late golf and shuffleboard have replaced the bees in the affection of many older men.

Beekeeping has long been famous as a calling in which men lived to advanced age and enjoyed serene and comfortable days long past the allotted three score and ten. One cannot but wonder whether this is true since the motor truck and modern equipment has changed the practice from one of leisurely activity to one of strenuous large-scale operation.

Honey Best Spread

HONEY, THE WORLD'S MOST FAMOUS food serves its best purpose when used as it comes from the bees. As a spread there is no substitute for honey. Even maple syrup, which is a much prized delicacy, takes second place to honey on breakfast cakes or biscuits.

In spite of the efforts of enthusiastic cooks, the world refuses to take a serious interest in the use of honey as an ingredient in cooked dishes. In millions of homes where honey is a

See It •

staple on the breakfast table, little is used in cooking. It has found a place in baked foods such as cakes and bread to slow down the drying process and retain the flavor of the fresh product for a longer time.

For every pound used as an ingredient in popular recipes, at least 100 pounds are consumed as a spread. The wise merchant seeks a market which requires overcoming the least sales resistance. While the beekeeper should encourage any legitimate use of his product, the best return for his effort will come from stimulating interest in its use as a spread. The breakfast table is by far the most promising outlet.

Unfortunately the directions sent out with honey for the school lunch program advised its use only in recipes. The children who consume it thus are unconscious of the fact that they are eating honey and the opportunity for creating a taste which will provide a future market is lost.

Wanted–More Bees

IN A RECENT RADIO BROADCAST AN answer was given to a letter from a Nebraska listener who wrote to inquire why his strawberries had set so little fruit after a heavy bloom. There had been no frost and he was at a loss to understand why the yield of fruit was so disappointing.

The answer indicated that the condition was rather general and the statement was made that few bees had been observed visiting the flowers in other neighborhoods as well. The short crop of fruit was credited to a shortage of bees, but the speaker stated that he was unable to explain why so few bees were present.

At almost the same hour a news commentator on a chain broadcast mentioned the fact that Secretary of Agriculture Brannon had asked for support for the honey bees in the general farm support program.

At last the public is coming to realize that the honey bee is of use aside from the storing of honey . While the beekeeper gets the honey, his neighbors get a far larger return from the labor of the bees.

The Weed Sprays

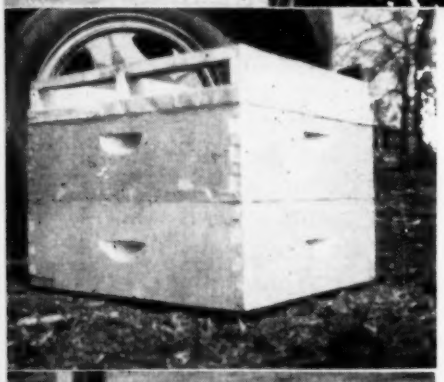
THE ENTHUSIASM WITH WHICH MANY farmers are spreading the new chemicals used in weed control is responsible for substantial decrease in bee pasture in many neighborhoods. Even in towns where wholesale distribution is made to control dandelions the effect is apparent. Not only the dandelions are killed but also the clovers and other plants as well. Without the contribution of the clovers in storing nitrogen, the grasses will soon show the effects of malnutrition and folks will wonder what has happened to the lawns.

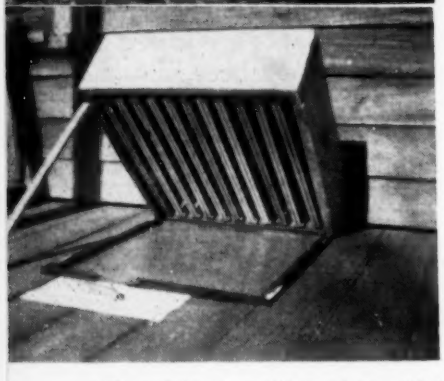
Roadsides in many neighborhoods are reduced to ribbons of grass as other plants are killed by the poisons. Not only the honey bees, but the game birds and song birds will suffer. While properly used, the new controls serve a useful purpose, they too often result in widespread destruction of useful plant life as well as insect life because of lack of understanding of the importance of a proper balance of plant and animal life. It appears that mankind is in danger of ensuring his own destruction by means of development of forces beyond his ability to control.

Bees a Conservation Agent

THE SUDDEN REALIZATION ON THE part of the public that honey bees are necessary to national prosperity because of their services in the pollination of flowers will have far-reaching effects. The beekeeper thus becomes a key figure in the conservation program. To provide sufficient bee pasture, better balanced planting will be necessary. Plants thus provided will give cover to game and food for song birds. The final effect will reduce soil erosion and provide a larger food supply for the nation.

(Top left) A swamp edge yard in Georgia. Colonies have geen slate covers with a shovel of sand on top of each. (Top right) Ventilated moving screen, held upside down to show construction. The 1½ inch slots carry air clear through the truck load from side to side.





(Top picture) A hive of two Modified Dadant shallows, with aluminum bottom and moving screen. Bottom picture, shows how the inexpensive aluminum bottom is made.

•

Shallow Super Colonies Work!

by Loren F. Miller

REGARDLESS of the price of honey, honey producers must keep expenses down and efficiency up. There is the ever-present stimulus of competition from sugars, sirups, jellies, jams, and sometimes other honey. To do this in many cases means jumping the familiar mental ruts. In order to cut costs and awkward operations, I devised a system a little different from the usual ones. Here is the idea and some of its angles.

Simply, I use Modified Dadant extracting supers for everything. One size shell, frame, and foundation—uniform and interchangeable—permitting ease and speed in all hive manipulations. This shaves costs for the migratory nucleus hauler, package bee user, and stay-at-home winterer.

In extracting full supers of honey in Minnesota in August, it was found that these shallows were far easier to handle than the ten-frame Langstroth deep supers. Those hold 50 to 55 pounds of honey plus 20 pounds tare, or 75 pounds gross. The Dadant shallow supers weigh 55 pounds gross and can be handled easily by anyone. In addition, carbolic acid pads will clean shallow supers of bees quickly, while it takes a hot day and a good wait to drive them out of a deep super.

After extracting, the next job is preparing seed colonies to haul to Georgia. If deep Dadant brood nests were hauled, the next spring dozens of useless motions were made getting shallow frame nuclei out of them. Nailing division boards in deep supers to cut them into two or three nuclei meant weeks of time wasting labor and didn't work well. Slipping shallow frames between deep frames to produce frames of brood was bad. Two or three trips were necessary and there was always a big drony "pie" hanging on every bottom bar.

Now in the northern yard in the fall the bees are already down in the bottom two-shallow-super nest on fat shallow frames of honey and brood. The cover is changed for a moving screen, a plug is put in the bottom entrance, the boxes are stapled together, and they are loaded. The next spring the bees are still in shallow bodies on perfect combs made from crimped wired foundation with hooks to keep them from breaking with any use.

The bottom board used is a single sheet of galvanized iron or aluminum with a ⅜ by ⅞ inch strip run around the edge flatwise for a bee space

under the frames. It is nailed on with six five-penny nails and has a ⅜ by 4 inch entrance in the front edge into which a wood closer fits (also ⅜ by ⅞). This closer is actually a part of the edging cut out for the purpose. It is V shaped at the left end and wedge shaped at the right end and easily fits into the opening which of course has similar V and wedge recesses into which the entrance plug fits when it is necessary to close the entrance. The closing plug has a nail in the outside edge near the right end (the wedge shaped end) for ease in inserting or removing the closer.

The metal bottoms are termite proof, rot proof, and sterilizable; cost half the price of wooden ones, cost far less to handle and truck, and can be built in half the time. The wooden rim is hot or cold dipped or painted with creosote, asphalt or coal tar.

This bottom weighs one or two pounds, against six or eight for a regular one. Per hundred this is 500 or more pounds dead wood to handle and haul. In terms of 35 pound nuclei it means 15 more profit making hives later at no extra cost.

In February, in Georgia, brood rearing starts. In late March, I make increase with shallows of combs or foundation, each with a bottom and a moving screen, one nucleus to the box. I lift out of the parent colonies, just the number of combs I want, ending with one comb of honey on each side of combs of brood, with adhering bees and maybe an extra shake or two of bees. Empty combs go back into the parent. A screen goes on each nuc and, when 40 or 50 are ready, they go to a new location at least two miles away. After they settle down, in go new laying queens in push-in cages. Each parent colony will produce more bees and brood for additional nucs every ten days.

Each increase may be made as strong or as weak as wanted. If the new queen is poor she is replaced quickly with no loss of bee labor or honey, then superseding does not hamper the new colony when it is later in a money-making flow.

When hauling times comes, each new colony gets equalized up or down, with brood, combs of honey or empty combs until all are exactly alike. The shallow frame parents furnish any combination needed quickly.

Often in the trip one runs into a sudden hot day and bees may smother, or at least suffer. But the shallow with its proportionately large screen top gives more air than deeper combs and the bees cool easier.

Arriving at destination, there is no transferring of combs; no removal of division boards; no injury or loss of queens; no disorganized, drifting bees. Just set each unit down, unscreen, add another shallow—and watch it grow. If it needs feed, slip in a couple of combs of last year's stored super honey. Feeder shells, feeder cans, sirup mixing and expense are not involved.

Anyone who thinks that the top-bars and spaces will restrict laying may rest easy. The queens cross over easily, especially if there is some burr comb. A queen with any "spizzerinctum" will hop that space without taking a deep breath. Also, using two shallows instead of one deep brood chamber, provides 14% more space, so there is less tendency to crowd and put brood in the honey supers.

If there are signs of swarming, I do not juggle frames, but just insert another shallow of empty combs between the previous brood shallows, first removing all queen cells. Then give extra top ventilation by slipping the cover back an inch at the

(Please turn to page 405)

(Top picture) A truck load of shallow hives on the way south. Bottom picture, shows some of the details of the load—roping, screens, and metal bottoms.

Washington Up-to-Date

SEVEN representatives of the beekeeping industry were in Washington the week of July 11 continuing the attempt of the industry to obtain price support for honey.

Following the period of the School Lunch purchase reports came in from the industry that Florida citrus honey was being offered for sale at prices ranging as low as 6 cents per pound; white honey in Texas was being sold at 6½ cents; honey had dropped 1½ cents a pound in California; and New York buckwheat honey was begging a market at almost any price. It was very apparent that something had to be done, and this information was wired to Mr. E. J. Overby, assistant to the Secretary of Agriculture, on June 22.

On June 28, the industry was pleasantly surprised when it received a wire from Congressman Granger, Utah, stating that he had been successful in getting the House Agricultural Committee to approve an amendment to HR29, designated to give relief to tung nut growers, making it mandatory that the Secretary of Agriculture support honey at 60 to 90 per cent of parity. This Bill was later reported out of committee as a companion Bill asking for price support for honey and tung nuts at 60 to 90 per cent of parity. The Bill was reported out of committee Tuesday, July 12, and now goes before the House for passage. Congressman Granger and Congressman Colmer, Mississippi, who introduced the tung nut Bill in the House, are both of the opinion that the Bill has a good chance of passing the House.

Industry representatives contacted members of the Senate Agriculture Committee in an effort to get something started in the Senate. On Wednesday, July 13, W. W. Wicht and Roy A. Grout appeared before the Anderson sub-committee of the Senate Agriculture Committee to explain the plight of the industry and to urge their support of any special legislation which might come before them and in their consideration of any general farm price-support legislation. It can be reported that the Senators present, Thye of Minnesota, Young of North Dakota, Hoey of North Carolina, and Aiken of Vermont, were quite interested in our plight and its possible effects on agriculture in general. Prior to this, Mr. John H. Davis, executive secretary of the National Council of Farm Cooperatives, in his testimony relative to the general farm price support program made an excellent statement to the sub-committee on the importance of honey bees to agriculture through their pollination services.

A committee of the group present in Washington interviewed the Secretary of Agriculture relative to his attitude toward the honey and tung nut Bill, and the possibility of obtaining price support through discretionary powers under present farm legislation. At the end of this conference, it was indicated that the Department of Agriculture might be able to do something for the industry providing the industry would submit to production controls.

Consequently, those present went into a series of conferences with officials of the Department to work out controls for the beekeeping industry which would be submitted to the Secretary of Agriculture for consideration. The principal part of this proposal was that a member of the industry, in order to participate in the price-support program, agreed to limit his operations to the average number of colonies operated by him in the production of extracted honey during the previous three-year period, or during any one of these three years, and to furnish to his county ACP office a notarized statement of these facts and his elected basis for operating.

Representatives then presented this proposal to Mr. Ralph Trigg, President of the Commodity Credit Corporation, who was keenly aware of our problems and indicated that he would like to see something done to solve our difficulties. He stated that he would submit our proposals to the Secretary of Agriculture and would give us an answer right away.

Industry representatives left Washington at the end of the week feeling that good progress had been made in our attempt to get price support for honey, having received a commitment from the Department of Agriculture that they would make a decision at an early date, and having supported HR29 in the House and paved the way for that measure in the Senate. What the outcome will be, we do not know at this writing, but we are more hopeful than we have been so far that there is a possibility that price support is ahead of the industry—one way or another.

The Federation is pleased to report to the industry that approval has been received for a project to establish a laboratory at Phoenix, Arizona, for the purpose of studying the effect of insecticides on honey bees. Plans are going ahead, also, to enter into contracts with private laboratories to study new uses for honey in the baking industry. In this case, the Federation is putting up $5,000 of the total cost to cover a two-year period, with the Research and Marketing Administration of the Department supplying at least $10,000 for this purpose. Representatives also contacted the Bureau of Extension concerning the employment of an apiculturist in that Bureau; the Bureau of Human Nutrition and Home Economics relative to a project on honey as a human food; the School Lunch Program as to the use of honey in their program; and various other agencies relative to the planting of sweet clover in crop rotations. No decisions have been reached as yet concerning these efforts.

Studies on American Foulbrood Resistance at Laramie, Wyoming

by A. P. Sturtevant,
U. S. D. A., Agr. Res. Adm., Bur. of Ent. and Plant Quar. (1)

THE testing work at the Intermountain States Bee Culture Laboratory of the Bureau of Entomology and Plant Quarantine at Laramie, Wyoming, on the resistance of the honey bee to American foulbrood has now been under way for 13 years. During this time the colonies used for testing have been headed by queens from three principal lines, or strains, which have been inbred from generation to generation. Until 1945 naturally mated queens were used, although beginning in 1943 some queens that had been inseminated artificially also were used. Results obtained with colonies headed by artificially inseminated queens were so satisfactory that since 1946 only artificially inseminated queens have been under test.

During this entire time a standardized method of test inoculation has been used, which has given comparable results from year to year. This test has consisted in giving 500,000,000 spores of **Bacillus larvae** in one liter of 50-50 sugar sirup to each colony, after the colonies, established with package bees, have become repopulated with bees from the test queens. This inoculation generally has been given early in June, before the start of the main honeyflow. This standard dose of spores is ten times the minimum number of spores that previously had been found necessary to cause infection in colonies. In early work the spore-sirup method of inoculation was compared with the scale-comb insert method. Since the two types of inoculation gave similar results at Laramie, it was decided to use only the spore-sirup method.

The test colonies inoculated by this standard spore-sirup method respond in general in three ways, depending on the degree of resistance the bees may have developed from generation to generation during the process of testing, selection, and controlled breeding.

(1) The colony becomes hopelessly diseased and has to be destroyed. These susceptible colonies appear more frequently in the earlier generations, and in lines being tested for the first time. As resistance develops in succeeding generations, susceptible colonies appear less frequently, until there may be no such colonies after a number of years of inbreeding.

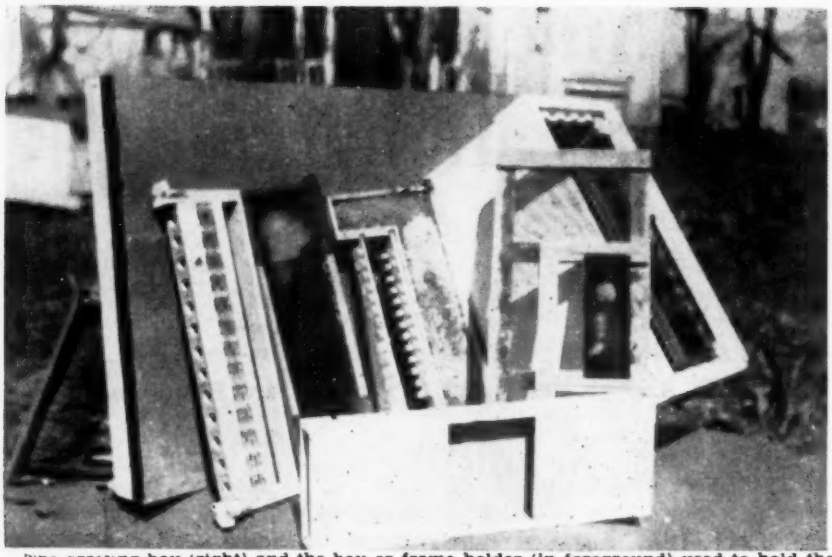
(2) Disease may develop to a certain extent in some colonies, but sooner or later the diseased larvae are removed by the bees, and the colony to all appearances recovers. If only a little disease is allowed to appear, such colonies may remain clean, although there is a possibility of some recurrence the second season. Recovered colonies show some resistance in that they are able to clean out the disease. Disease may appear early in the season and then disappear, a few scattered cells may be observed throughout the season, and final recovery not until the end of brood rearing. Queens of such colonies are not suitable for breeding purposes.

(3) The colonies showing high resistance are those that never permit disease to develop to the infectious, ropy stage and in which no disease can be detected by the most careful inspection. Queens from such colonies have been used for breeding purposes. Disease rarely has been observed in the negative colonies the second season, particularly during more recent years.

Results obtained at Laramie with the naturally mated inbred queens indicated definite improvemnt in resistance in two of the strains under observation and a less definite improvement in the third strain. Improvement was rapid at first, but later it tended to slow down at different levels somewhat below complete resistance. Colonies 100 per cent negative after inoculation for entire line groups, in any one year were never obtained with the naturally mated queens. Such negative colonies as occurred were considered to be the most highly resistant and were the ones from which breeder queens were always selected.

Since work has begun with artificially inseminated inbred queens, in which the parental factors can be absolutely controlled, during the last two seasons in particular, the development of resistance has been accelerated. Entire groups of colonies headed by all these inbred lines of queens have acquired such high resistance to the disease that 100 per cent of the colonies have been negative to the inoculation tests, never showing any evidence of disease. Also several groups of two- and three-way crossbred queens—crossbred between the three highly resistant inbred lines—have shown this 100 per cent resistance, as the colonies have remained completely negative to the inoculations. Moreover, crossbreeding appears to be developing hybrid vigor, as indicated by strength of colonies and increased honey production. Therefore, it is hoped that before long highly resistant and vigorous lines of hybrid queens may be developed to a point where they will be available to the beekeeping industry for better control of American foulbrood.

(1) In cooperation with the University of Wyoming.



The grafting box (right) and the box or frame holder (in foreground) used to hold the frame under water pressure to wash out all exposed larvae after the graft has been made. The frame is then returned to the breeder hive.

Queen Rearing

PART II—The nucleus for the breeding queen and the methods and equipment for grafting.

by James W. Bain

The Breeding Queen

THE breeding queen is kept in a two-story, five-frame nucleus, each section holding five shallow extracting frames separated by a queen excluder nailed to the bottom of the upper story. Two frames in the brood department have a portion of the top and bottom bar reduced to ½ inch in width (see illustration). This permits the apiarist to reduce the depth of the cells containing desired larvae. One of these frames is placed on each side of the center frame in the lower story containing the queen. Four days later you should have an abundance of larvae from ten to sixteen hours old suitable for grafting. Keep feeder supplied with extracted honey or heavy syrup at all times.

Grafting Box

While various methods of producing accepted cells have been tried, the method recommended is the grafting box. For forty years this method has proved its worth over and over again.

How To Make

Make a box to hold five brood frames spaced ½ inch apart, screening top and bottom. An opening in the lid with sliding door permits the use of a funnel in stocking with bees for grafting.

How To Use

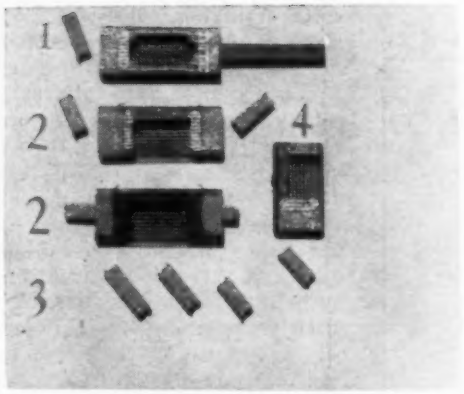
At 1:00 P. M. stock the box with bees taken from colonies that can spare them. Use from two to four pounds of bees depending on the number of cells to be grafted. After the bees are installed, put in a cool place until 3:00 P. M. at which time they will readily accept the grafted cells. Have in readiness bars equipped with disks and cells ready for grafting.

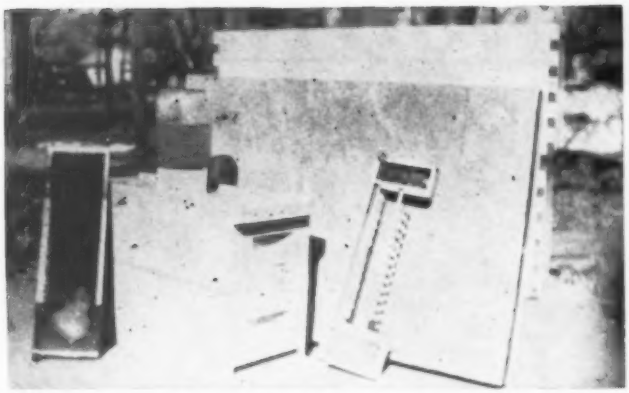
I suggest disks 5/16 inch high by ¾ inch in diameter. These disks permit the removal of disk and cell combined, for caging, or the cell may be detached from the disk when introducing into nucs. This arrangement is much to be preferred over the commercial cell cups. To make disks secure a ¾ inch dowel of suitable length and with a sharp, thin saw, slice into units. Drive a ½ inch cement-coated nail through the disk far enough so you can press them into the soft wood of the cell bar.

Cell cups are fastened to disks in the following manner; dip a small brush in hot beeswax and set it gently on the disk. With the other hand hold the cell against the brush. Now, withdraw the brush and the cell will stick to the disk. Please note the style frame used. A portion of the bottom bar has been removed making it possible to place the grafted cells directly in the cluster of bees, thereby assuring immediate acceptance.

Making the Graft

With all the equipment in readiness, go to the nucleus containing the breeding queen and select a frame with larvae at the right stage. Brush off all the bees . . . do not shake them off. Lay a sharp knife across the frame and reduce the cells above the desired larvae to a depth





Our "Never Fail" introducing cages. No. 1 is used in the entrance of strong colonies. The handle permits the apiarist to slip the cage back under the frames to a safe distance. No. 2 has a queen excluder installed inside. Always use the SHORTER FOOD CONTAINER against the queen excluder, thus allowing the bees to enter the cage with the queen one or two hours before the longer container is empty, which releases the queen. No. 3 shows detachable food containers made in four lengths—1, 1½, 1¾, and 2 inches—to fit all cages, making it possible to release queens in from one hour to three days depending on length of containers used. To fill container, spread out candy on a smooth surface and stamp the container down on it so that it will be packed in solid, in the same manner as a housewife cutting biscuits. No. 4 is used in introducing to nucs—equipped with long food containers it can be used in colonies. These cages are strong and durable, made of 8x8 hardware cloth. CAUTION—do not use any galvanized material in cages that has not been cleaned with strong washing powder. (Top Right) The two-story nucleus in which the breeding queen is kept, showing one frame with top and bottom bar reduced to one-half inch.

of ⅛ inch. This action will expose hundreds of larvae just the right age and simplify the grafting operation. Just before tranferring the larvae to the cell cups sprinkle some cool water over the bees in the grafting box. By the time the graft is completed the bees will be very quiet. In the next step, raise the lid of the grafting box from one side, as though it were hinged to the other, lower the frame of grafted cells into the space left vacant in the center. At this point transfer the grafting box to the inside of a building and cover with a cloth, making certain ample ventilation is available at the bottom.

Now that the graft is complete it becomes necessary to remove the remaining larvae before the frame can be returned to the hive. The frame holder (shown in illustration) enables the author to hold the frame under a water tap which quickly removes the larvae. Within four days after it is returned to the hive the frame should contain new larvae suitable for grafting. Finally, after sixteen to eighteen hours the bars of accepted cells, together with adhering bees, can be transferred to the cell-building colonies for completion.

In conclusion the author wishes to give credit for certain features of this system to the inspiration of the late Henry Alley and G. M. Doolittle. It is to be hoped that other beekeepers will try this system which has proved its worth for over twenty-five years.

Ohio.

OUR ERROR—In Part I of this article which appeared in our July issue, p. 339, column two, an error was made in the time required before the cells were sealed after they were given to the cell-building colonies for completion. Instead of reading: "As soon as the cells are sealed (approximately 5 to 6 days) a second bar of accepted cells may be introduced," this part should read: "As soon as the accepted cells are sealed after being placed in the cell-building colony (which requires from **three and one-half to four days**), a second bar may be introduced to the same compartment. Operating the cell-building colony to full capacity, over one hundred first-class cells can be produced every twenty-eight days."

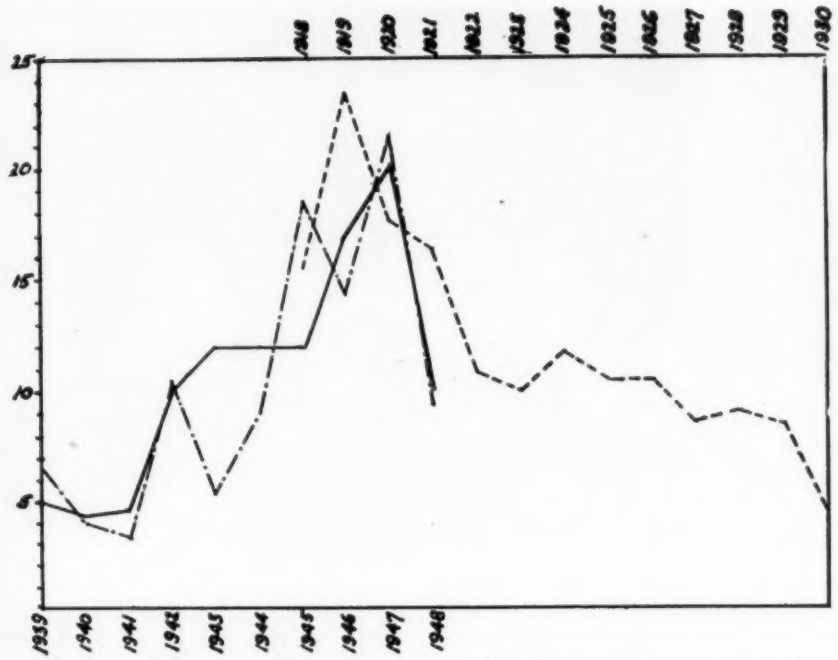
Alfalfa Seed Production

In an article appearing in the October, 1948, issue of the Journal of Economic Entomology, Dr. C. J. Drake gives information of interest to seed growers and beekeepers interested in pollination of alfalfa.

Although Dr. Drake reports that the honey bee is not as efficient in tripping the blossoms of alfalfa as some of the wild bees, he says that they were always the dominant bee in the fields, averaging from 2 and 3 bees to as high as 5 and 6 bees per square yard during the main blooming period. He further states: "The large population of the common honey bee day after day during the alfalfa blooming period helps to compensate to some extent for its poor and undependable tripping ability. Its value as a pollinator is also increased because it often cross-pollinates open-tripped flowers that have been tripped by various causes other than pollinating insects."

Dr. Drake reports that the highest alfalfa yields in field tests in 1947 were obtained by W. B. Hall in western Nebraska. From 250 acres Hall hulled 2,020 bushels of alfalfa seed. The best field, of 50 acres, yielded 500 bushels, or at the rate of 10 bushels per acre. Dr. Drake directed the program of insect control using 10 per cent DDT in ground powder dusting. The cutting of the hay crop was staggered so as to prolong the flowering period of each seed field to 30 to 40 days and, in addition, 256 colonies of bees were moved from Texas to the Hall farm about the time the alfalfa bloom began to unfold. Approximately 7 tons of extracted alfalfa honey were harvested.

It is apparent from Dr. Drake's report that the staggering of the hay cuttings to provide a longer blooming period not only provided a better opportunity for the bees to gather a larger quantity of honey but also provided a much larger number of colonies working the successions of bloom. For example one might assume that there were 250 colonies of bees pollinating the 50-acre field which yielded 10 bushels of seed per acre, or 5 colonies of bees to each acre of bloom. This appears to be an excellent case where cooperation on the part of the seed grower resulted in a profitable arrangement for both himself and the beekeeper.



Solid line represents the average Los Angeles market price for honey. The dot-dash line represents the average cost of production per pound of honey. The dash line represents the price trend after World War I.

Production Cost

by Roy A. Grout

At a recent meeting of the California Beekeepers' Association, Mr. H. J. Crawford, Fullerton, California, presented an interesting and informative discussion of his cost of production in comparison with the honey crop and the price obtained for it. These figures, covering a ten-year period, 1939 through 1948, are listed below. Mr. Crawford states that they compare favorably with those of other migratory beekeepers in southern California.

The average yield per colony for the ten-year period was 109 pounds, varying from a low of 50 pounds in 1947 to a high of 220 pounds for 1941. The number of colonies managed varied from 710 to 1080. No figures for receipts from beeswax are included in the cost figures. The costs do include, however, depreciation, 5 per cent interest on the investment, and a salary to himself equivalent to what he paid for hired help. The latter ranged from $75 each month in 1940, to $240 each month in 1948. The interest on the investment also was flexible. In 1939, the over-all valuation amounted to $10 per colony, and rose to twice that figure in 1948.

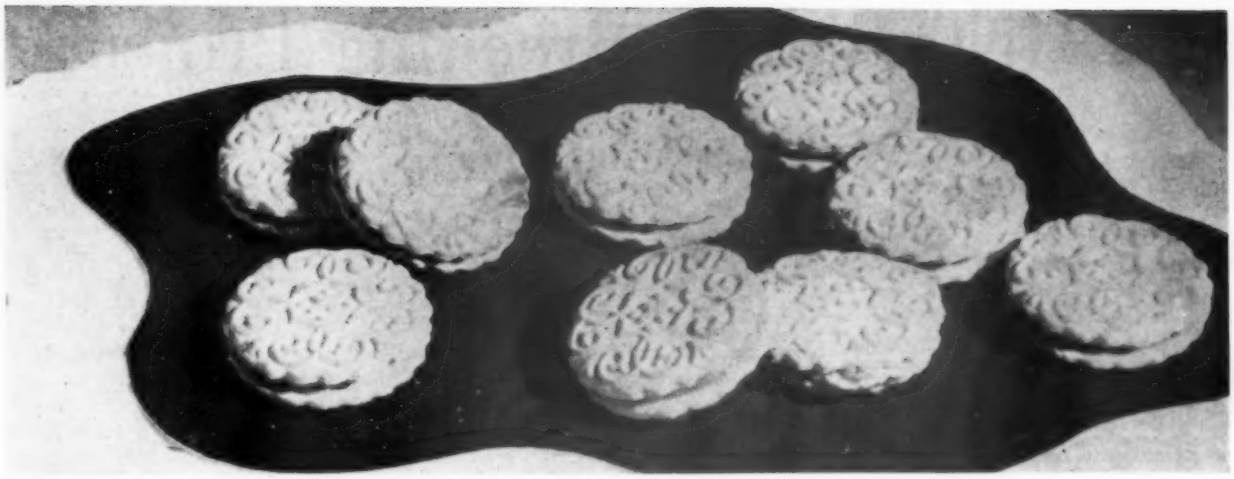
In the first five-year period, 1939 through 1943, Mr. Crawford showed a profit amounting to $2.54 for honey production and 48 cents profit for beeswax production, making a total profit per colony for this period of $3.02. In that period, however, there was a loss in 1939, amounting to $1.27 per colony, and again in 1942, amounting to 38 cents. Both of these years were low in honey production, the crops being 73 pounds and 70 pounds, respectively. The year the greatest profit was obtained was in 1943 when his colonies averaged 180 pounds of honey which sold at ceiling prices, netting him $11.95 per colony.

In the second 5-year period, in spite of higher prices for honey, a profit of only 29 cents was averaged in honey production. Including beeswax production, the total average per colony profit amounted to only 77 cents per colony. This is reflected by three years in which the production of honey averaged 69, 72, and 59 pounds, resulting in corresponding losses amounting to $4.64 per colony in 1945 and 58 cents per colony in 1947. It was in 1947, the peak price year, when Mr. Crawford received 20.2 cents per pound for his crop of honey. It cost him, on the other hand, 21.5 cents to produce a pound of honey that year, principally due to the low average crop obtained, but also due to the high cost of labor and operation.

Mr. Crawford states that, in normal times, a honey producer should make expenses on a 60-lb. crop (we have always stated it otherwise: that an average crop of 100 pounds per colony should enable the producer to make a profit). He points out that he barely broke even on a 114-lb. crop last year. He continues, "I have done some figuring on what will happen in 1949. Even though by 'hook or crook' I manage to cut my operating costs one dollar per colony, it will cost me 19.3 cents per pound to produce a 60-lb. crop. This will mean a loss of $4.42 per colony."

Mr. Crawford points out that this is a serious situation and, to illustrate his point, made the following graph on which he has attempted to parallel the price trend that occurred after World War I with the present trend of honey prices. He states that honey prices hit their peak in 1919 and that it took three years for the price of honey to drop to 10 cents per pound; whereas in the present period, the price of honey dropped from its peak to 10 cents and below that figure in only one season. It is Mr. Crawford's opinion that a support price for honey is a step in the right direction.

Year	Production Per Colony	Price Rec'd Per Lb.	Cost Per Lb.	Cost Per Colony	Profit Per Colony	
1939	73 lbs.	.05	.067	$ 4.92	-$ 1.27	
1940	95 lbs.	.043	.04	3.85	.23	$3.02
1941	220 lbs.	.045	.034	7.69	2.21	5-Year
1942	70 lbs.	.10	.105	7.38	- .38	Average
1943	180 lbs.	.12	.053	9.65	11.95	
1944	140 lbs.	.12	.09	12.76	4.04	
1945	69 lbs.	.12	.186	11.92	- 4.64	$0.77
1946	72 lbs.	.17	.143	10.37	1.87	5-Year
1947	59 lbs.	.202	.215	12.49	- .58	Average
1948	114 lbs.	.10	.094	10.61	.79	
Average	109 lbs	.107	.103	9.164	1.422	



Fill Up the Cookie Jar

by Mrs. Leonard Thrall

Happy and healthy too is the household where the cookie jar is always crammed full of energy-giving honey cookies. Honey really comes into its own in the realm of cookie making. No need to worry about honey cookies keeping fresh; the longer you keep them the better they taste. At our house there is only one fault we can find with honey cookies—they disappear too rapidly.

Honey Krisp Cookies

1/3 C. shortening
½ C. honey
2 eggs
½ C. sour cream
1¾ C. sifted flour
1 tsp. baking powder
¼ tsp. salt
½ tsp. soda
½ C. chopped nutmeats
½ C. dates
½ tsp. nutmeg
1 C. Kellogg's Rice Krispies

Blend shortening and honey. Add well-beaten eggs and cream. Sift flour with baking powder, salt, and soda; add to first mixture. Stir in nutmeats, dates, flavoring, and Rice Krispies. Drop from spoon and bake in oven, 375 degrees about 20 minutes.

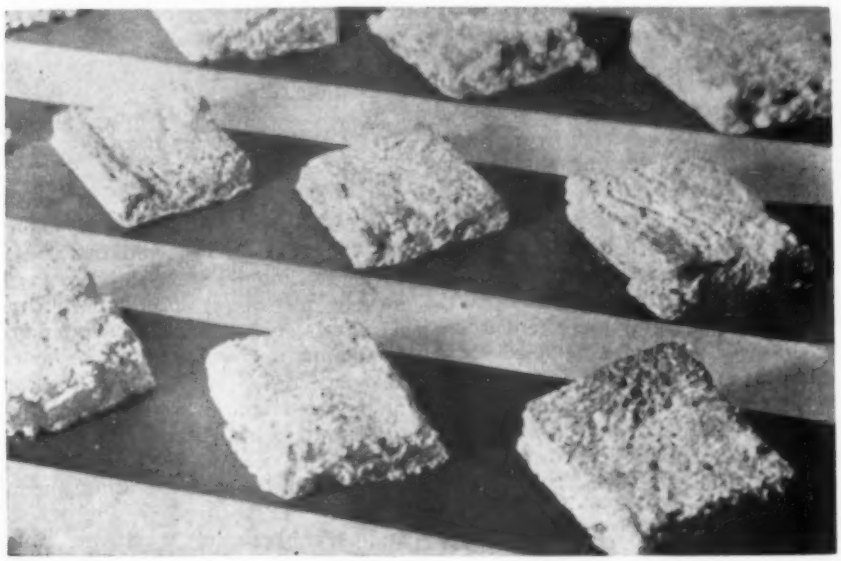
If there is a childhood memory which cannot be forgotten, it's Grandma's cookie jar! Somehow, summer or winter, her cookie jar was always full of ginger, sugar or molasses cookies. I can still see her rolling out the dough, sprinkling it with sugar and cutting out the round shapes with a glass. One of our responsibilities as a homemaker is to continue this tradition—for some things never grow old. Now, as then, the right approach for winning a child's favor is by calling him and his friends in from play and serving cookies.

Since we have discovered the "Drop" method and the crunchy cereal cookie, a batch can be made up in a jiffy.

Ground Oatmeal Cookies

Grind 1 cup oatmeal and 1 cup raisins; add 2 eggs, ½ cup sugar, 1 cup honey, 1 cup shortening, 2½ cups flour, salt, vanilla, 1 tsp. soda in smallest amount of hot water that will dissolve it. Roll into balls and in sugar and flatten with fork in form of crosses.

Minnesota.



The History of a Breeding Project

PART III—1941-1948

by G. H. Cale, Jr.

Parts I and II of this history, describing the early steps in breeding experiments and the discovery that resistance is inheritable, appeared in our February and May issues. In Part III is described further work which resulted in a hybrid bee with better characteristics of honey production, disease resistance, uniformity, and gentleness.

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WITH the discontinuance of field testing in 1940, Dadant & Sons' participation in the cooperative arrangements for breeding a resistant stock came to an end. While it seemed at the time that the purposes for which this study had been inaugurated were completed, interest in the breeding work had not been exhausted by any means.

The years 1941 and 1942 may be called the "groping years." There was no definite program in mind, yet Mr. Pellett, in his work at Atlantic, Iowa, and Henry Dadant and G. H. Cale, Sr. in their work in the Dadant apiaries, could not stop so suddenly the trend of thought and effort which had been going on during all those previous years.

During 1941 to 1943, there was little actual breeding work done. Mr. Pellett continued to raise some queens at Atlantic—keeping some of them and sending others to the Dadant apiaries at Hamilton, Illinois. Those that were sent to Hamilton were placed in producing colonies and watched for other characteristics as well as being tested for resistance. In one case at least, a number of select and tested queens were given to a large honey producer who wanted to raise queens for his own colonies.

It would be hard to say just what provided the spark that started the Dadant breeding program in earnest. The wishes of the men concerned, the desires and pressing needs of a number of beekeeper friends, the very earnest desire to serve the industry—all of these reasons played their part and influenced the final decision to continue and expand the breeding efforts.

There were two avenues of approach open, both of which had to be considered before the breeding program could succeed. These were: (1) genetical—the inheritance which a given queen and drone could pass on to their offspring, and (2) environmental—the conditions of food, shelter, and care taken in the rearing of stock.

Breeders in the southern states were doing their best—but the queen bee still mated with chance drones from unknown sources. Few queens lived long enough to make testing their progeny possible before using the mothers as grafting sources. Usually by the time the progeny was fully tested the mother queen was too old for further use or was dead. Instrumental insemination was the answer to this problem, but by 1940 this process had not yet received the refinements necessary to carry on a large breeding project.

Environmental rearing conditions had fared somewhat better at this time. Some breeders fully recognized that certain mass production techniques were poor queen rearing practices. Others—not recognizing this fact, or under the press of business—failed to improve the environmental rearing conditions of their stock. There was generally some attempt to control drone source, yet few breeders could truthfully say that they were sure of the male parentage of their stock.

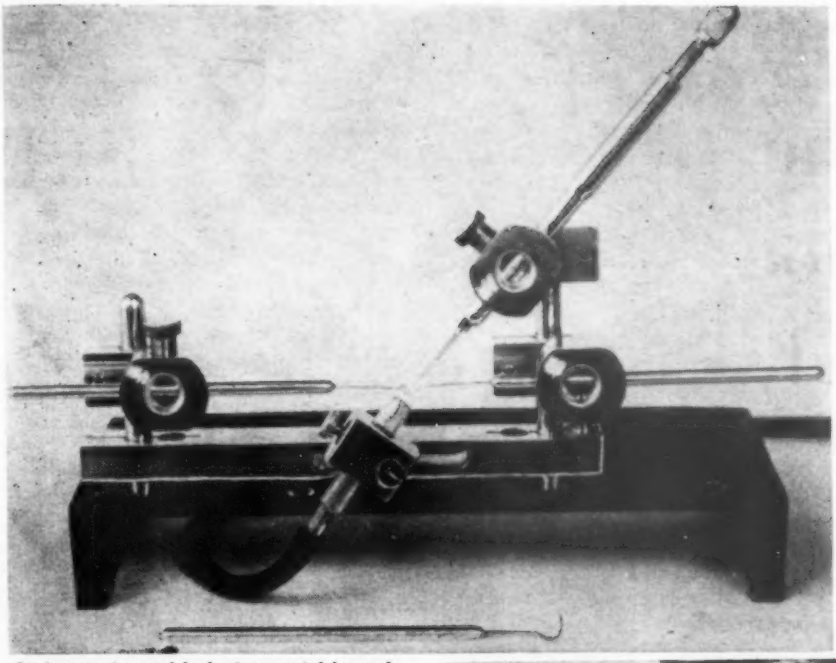
The early approach of this breeding program was not much different than that which had become standard practice everywhere—to select and breed from the best stock. That was the method followed from 1941 to 1946. Colonies were watched very closely for honey production, disease resistance, temper, color, nonswarming, and other desirable characteristics. Selection of queens was made from among four hundred to five hundred individuals and the best ones were used as breeder queens. By 1944, the first cooperating queen breeder was secured in the South and the breeding program was definitely committed to supply the industry with better queens.

There can be no doubt that the early stock did not possess all the traits the honey producer wanted—it was lacking in many points of refinement. However, progress was being made and each year saw the stock just a little better than the previous year. During the period from 1941 to 1946 progress was slow but gradual and certain. The stock became more uniform in its color and actions and most of the bad temper that characterized the earlier stock was eliminated. Honey production and disease resistance percentages gradually crept higher.

By the winter of 1945-1946 it was very apparent that further progress of a lasting nature would have to be made with a more complete control of parentage in the various lines. Instrumental insemination had become an entirely practical procedure and through the courtesy of the Division of Bee Culture this technique was learned in early 1946.

Let us pause in the telling of this story to give credit. It is not the purpose of this article to go into great detail in enumerating the various contributions to instrumental insemination, however the men concerned deserve acknowledgment for their labors. Dr. Lloyd Watson, W. J. Nolan, and Dr. Harry H. Laidlaw contributed a great deal to the refinements and perfection which had been reached in instrumental insemination of queen bees. Gratitude and indebtedness is also due the Division of Bee Culture and more specifically W. C. Roberts and Dr. Otto Mackensen who, then and since, have given so freely of their time and advice. Will Roberts and Dr. Mackensen have smilingly put up with interruptions of their own work and have never failed to be the source of very important and useful information on breeding plans and procedures. To them and to the Division sincere thanks are due.

Mr. John G. Miller, of Corpus Christi, Texas, was the first southern



Instruments used in instrumental insemination of queen bees.

breeder to cooperate in this breeding venture. To him should be given full credit for daring to be first; for being willing to raise an unknown and untried stock; for—as the saying goes—"sticking his neck out." Certainly credit is due also to those commercial honey producers who have been willing to use this stock and to report so conscientiously the progress and results.

Recent Years—1946-1948

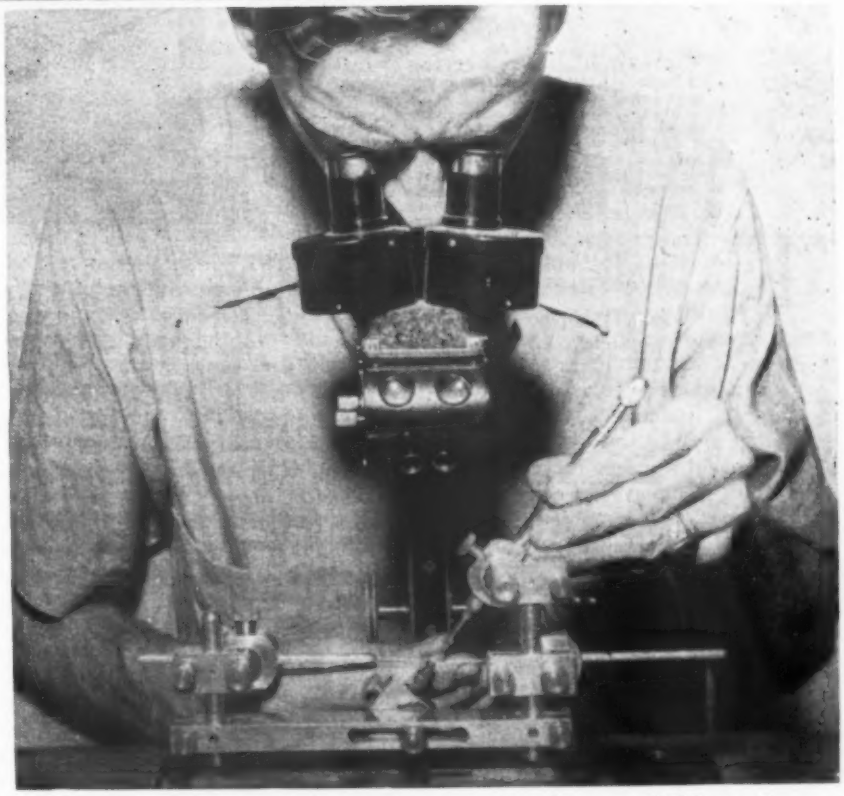
With instrumental insemination as a powerful tool, the breeding program could now advance more rapidly. The immediate objective was to develop a better bee by using hybridization—a word which will be immediately objectionable to many who read this article. The word hybrid has come to mean—to beekeepers at least—something that is cross, racy, of various colors, and having degrees of resistance and production which vary from one extreme to the other.

That ponderous volume of the sage of the English language describes the word hybrid as follows: "The offspring of the union of a male of one race, variety, species, genus, etc. with the female of another. **In genetics, however, the term hybrid is commonly applied to any offspring of parents different in genetic make-up."** Here then, has been the error! It was right to call a cross between Italian and Caucasian a hybrid—**It was wrong to think that type of cross was the only meaning of the word hybrid.** Thus it is possible to have a hybrid bee composed of two or more **genetically different** Italian lines.

The next step was selecting, inbreeding, and evaluating the various lines which were available. Because of the weeding out of lines which had traits that were not desirable, the work was reduced to four lines which were believed to have superior characteristics. Then there arose some questions which could not be answered without a commercial testing of the stock. It was known that all of the four lines were resistant—but resistance had come to be only **one attribute** demanded of a stock. What about production? What about temper, color, uniformity of action, nonswarming, nonpropolizing, and countless other characteristics? It would not be possible to gather all the desirable traits in one bee so soon, but the experimenters hoped to develop enough of them in a hybrid bee to make that bee superior to those used previously. Many years must pass before all of the desirable traits may be gathered together into bees superior for definite purposes—in the meantime we must use the best available and concontinually strive for improvement.

In the spring of 1948 the first hybrid crosses were made. These were instrumentally inseminated queens and were tested in northern honey producing locations — using as check colonies selected stock from a reputable commercial queen breeder. Considerable care was taken in seeing that all colonies were relatively alike in strength, that stores

(Please turn to page 395)



Dr. Roberts using the instruments in his laboratory. A bifocal microscope is mounted over the instruments.

The Alarming Decline of the Bee Population In the United States

by Richard C. Potter

In the September 1948 CORONET, Carol Heggen calls Dr. Potter a latter-day Thoreau, who has taken an almost defunct museum and made it a highly functional educational institution that gives to museum management a new life and a new purpose. The Worcester Museum, which Heggen calls the Museum of Miracles, stresses an underlying philosophy—the need for the conservation of America's natural resources.

THAT the bee population of the United States has been on the decline for several years is common knowledge to beekeepers. The public however, has not been made aware of how important this decline is and how disastrous it may become if it continues for any great number of years. Nor have the implications of the continued lack of bees on the economy of every living person been brought into sharp focus.

So often we hear the expression that we "live on the land," but many of us live not "on the land" but "off the land," and a long way from it. One example might more vividly fasten this fact in your mind. We have in the United States approximately 550,000 retail outlets for the distribution and sale of groceries and meats. These stores vary in size from the one-man store to the huge super-market of the large city. Let's take an average of four workers in each store—that would mean in this activity alone 2,200,000 individuals are just distributors of food at retail. Backing them up is a wide-flung, well-organized group of wholesalers with many millions of clerks, warehousemen, processors, transportation workers, shippers, salesmen, truckers, and brokers. All of these are non-producers—dependent wholly on the producers of food—and by their labor they add nothing to the intrinsic value of the articles of food they represent. Now, multiply all these by the number of other industries catering to our standard of living, and you reach a perfectly enormous number of people who live "off the land." As a matter of plain fact, 82% of all ages are not engaged even remotely with matters of food production while 100% of all ages are 100% consumers of the products raised by the 18% who till the soil. It is hardly to be expected with our present system of education that the 82% of our population who live "off the land" should know anything about nature's way of maintaining them in their very existence upon the earth.

In all this, the humble, lowly bee plays a tremendously important part —so important that his decline threatens the whole structure of living for the "off the land" dwellers.

Back in prehistoric times, early in the development of earth's history, there evolved side by side and interdependent upon each other in the tropical warmth, classes of green growing plants and classes of insects. To the plants the insects became a medium of fertilization and self-perpetuation, while the plants in turn furnished their visitors with the very bread of life. During this period, plants evolved a pollen too sticky to be wind blown, and they further refined themselves by bearing flower parts of one sex only upon their stalks—such is the case of holly and many other plants. This necessitated the development of nectar, color, and odor, in order to lure the insect friends to them and thus insure their propagation. Ofttimes, all three of these are present even though they may be imperceptible to human eyes and senses. A bee possesses so many smelling plates that they may constitute the major part of her smelling apparatus. Her two big compound eyes and her three simple ones, while color blind to red and green, are so sensitive to ultraviolet rays that they see with extraordinary clearness blues and violets; therefore vein markings on blossoms and the deeper color of the hearts of the flowers are to the bee what highway markers are to us—unerring signs leading straight to the stores of pollen and nectar. This sense of color perception will always teach a bee that flowers which are immature

or past maturity will not yield the products they have to have; in the one, colors are not developed, and in the other, they are faded. Probably this is one of the main reasons why a bee will not visit the same flower twice. Then too, another amazing differentiation is that whether the bee is a pollen gatherer or a nectar seeker, she visits only one species of flowers in her hours of journeying, so that with only rare exceptions, the flowers always receive pollen of their own kind. An observant beekeeper, keenly aware of color and flower, can determine at eventide the kind of flowers his bees have visited by the color on their panniers; orange from dandelions, greenish white from blackberries, russet from the clovers and black from the poppy—to mention a few.

We must emphasize over and over again the intricate processes of fertilization by bees and the tragedy that will follow interruptions of them by man through selfish, ignorant practices such as have caused the decline of our bee population.

There are numerous instances already apparent in the losses sustained by agriculturists because of the decline of bees. Only honey bees can today adequately pollinize clovers, melons, berries, and fruit—including blueberries, almonds, pears, cherries, apples and plums. Time was when the farmer could rely on wild bees and bumblebees to fertilize his plants—those that are not self-pollinating. That day, however, is passing because of our ultra modern practices. The disappearance of rail fences, hedge rows, grassy banks and other undisturbed places has sharply reduced the insect population. This, together with the periodic burning over of areas, thus reducing more and more land to the plow, has taken a toll in the number of wild bees.

The free use of all kinds of toxic insecticides used to protect orchards, woods, and fields has also taken an unestimated toll of beneficial insects —even poisoning the ground in which they must nest. In the case of the bumblebee—where the queen alone lives through the winter, and must collect her nectar early with which to start her new brood—her nest is destroyed by arsenical poisoning. When this happens the potential benefits of a whole colony is thus destroyed. Certainly here is a chance for our scientists to get off the chair of academic isolation and really invent some means of perfecting insecticides and fungicides that will in their application method destroy only the enemy of the plant and not the insect friend.

Does it make sense that we have now in trade and traffic 916 different kinds of insecticides, and well over 400 varieties of fungicides, many of which kill not only the fungus, but the insect? And not content with ground killing machines, we have taken to the air so that from airplanes we can kill 900 times quicker by covering that much more area faster. It just doesn't add up to sense as we, the taxpayers, support the agencies that continue to fail to recognize the insidious damage that is done yearly to our means of subsistence.

This bee shortage is not confined alone to us, but is world-wide. When Russia reorganized her farming operation into a system of collective areas with remote control through a bureaucracy, things began to happen. Insects' native homes were destroyed wholesale as the land barriers under the old system were removed in the enormous development of power farming fields. During their original Five-Year Plan for agriculture, seed production decreased so rapidly that a terrible famine resulted. In the second Five-Year Plan, the fact of declining bee population was recognized as the cause of crop failures and an increase in bee colonies of 800 per cent was ordered, or an increase from five million hives to forty million. This increase was again doubled in the fourth Five-Year Plan and only then were the crops adequately pollinized. This decline, making necessary such drastic action, had taken place in the short period of fifteen years. It is impressive to us because it points the way we are going, and going fast. We do not have a system that can force the increase as did Russia, but have to depend upon education of the public.

We could go on through Europe, Asia, Australia, South Africa, and back home to Canada and South America, for wherever the **new agriculture** of mass production has been advised, formulated and practiced by the followers of our agricultural scientists, the same thing has taken place—great areas ever increasing, acre and unit yields of crops ever decreasing—as we puncture the arm of agricultural husbandry over and over again with new medicines in the form of plant stimulants. The answer lies in the return to the former practices of a much more natural agriculture in times when men were closer to nature and knew, without always understanding, her methods, since the effect was always in evidence even though the cause might have been obscured.

Perhaps the mention of one more example may bring the whole matter a little closer home. The state of Utah has always been known as the "Bee State." Alfalfa was and is the state's leading crop, and her prosperity depends on the favorable growth of this crop in seed production. Bees have to be present to insure seed in alfalfa. In Utah, the bee decorates the state seal and the Mormons, when Utah was about to enter the Union, proposed the name "DESERET" for the state, this being the Hebrew word for "bee." Yet in this bee state, in so short a period as from 1925 to 1946, the seed production of alfalfa declined from 25 million pounds to less than 4 million pounds, while the acreage planted during that time showed an increase of about 25%.

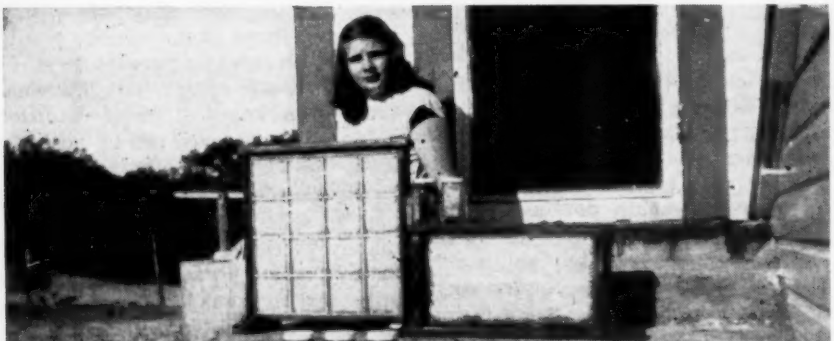
At long last in some places, notably in New Jersey and California, we are visualizing the growth of itinerant beekeepers. This is, of course, a specialized service and the beekeeper must not only know the flowering times of the various plants but also must be prepared with a decidedly mobile apiary. At the same time, even this will be of doubtful value until we learn not to "kill the hand that feeds us."

The whole problem of conservation both of wild life and of soils is intimately bound up in the decline of bees. Plants like white clover which only recently has come up in importance as a soil builder and soil conserver, need much more attention, for such plants serve dual purposes, both for the soil conservationist and the beekeeper. Also important is the new clover from Russia (Trifolium ambiguum or Pellett clover), which is even more adaptable for this purpose than our own clover.

These are some of the related problems of beekeepers and agriculturists. Every association of beekeepers would serve the cause well by promotion of education in these matters so that the public would become, in the years ahead, informed as to the dire situation in which continual malpractice places the food supply of a nation.

Taken from a paper read before the Worcester County Beekeepers' Association, January 15, 1949, at the Museum of Natural History, Worcester, Massachusetts, by the author, who is Director of the Museum and Past President of the Association.

Blazing Star—It yields nectar abundantly (often called gayfeather-Liatris. Purple flowers on long spikes that make a fine showing in midsummer.



Betty Mae, daughter of Paul Wege, Lawton, Oklahoma, is a 4-H honey exhibitor. The jars took fifth at the Comache County Junior Fair; the sections took first at the Oklahoma State Fair.

H. E. Dale, Herrin, Illinois, found this yard almost wiped out with disease four years ago. He gassed the bees, cleaned the equipment. Then he established 75 more colonies feeding preventive sulfa. Not a single case of disease since.

DDT For Combs

A beekeeper of a neighboring community dropped in on us to report that his wife had become concerned last summer during his absence, because his extracting combs were being eaten by wax moths.

The concern led to the application of DDT to the combs. Nothing more was thought of it till package bees were placed on them this spring. Results, many of the bees succumbed and all but one of the queens became drone layers shortly afterwards.

Apparently with combs shut up as these were, the effects of DDT may be apparent for a long time afterwards, even though the spray in itself unless concentrated may not be lethal to the adult bee.

Breeders Guard Against Disease

In the province of Bologna, Italy, under the Director of Veterinary Services, regulations have been set up concerning inspection and proper prophylactic measures before queen bees can be reared and distributed.

Although no Acarine or other communicable diseases are known to exist in Bologna province at the present time, the desire is to expedite restrictions against the importation of their stock into other countries, while at the same time stringent measures are applied to prevent possible sources of infection. The information comes from the "Consorzia Apistico Provinciale" of Bologna, an association of beekeepers.

Bees In Cyprus

An eight-page booklet entitled "Modern Beekeeping" has been issued by the Department of Agriculture of Cyprus. Prepared by Osman Nouri and Costas Miltiades, it covers very well the preliminary knowledge necessary for keeping bees by modern methods. The Pan-Cyprian Beekeepers Association is active in Cyprus and issues a small bee journal.

P. Bruce White

British bee magazines announce the death recently of P. Bruce White. Mr. White discovered the relation of **Acarapis woodi** to Acarine disease and can be given credit for a good part in the successful combating of that disease.

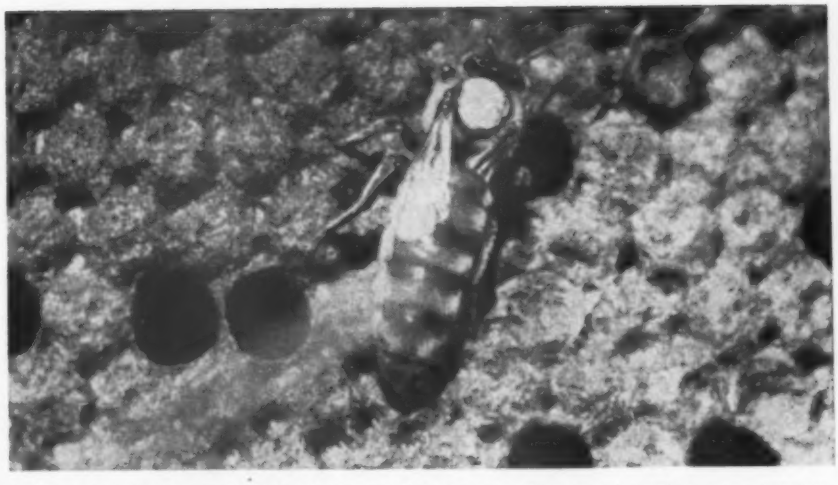
The History of a Breeding Project

(Continued from page 391)

of honey and pollen were available, and that the queens all started to lay on approximately the same day. Then there was a waiting period such as had been suffered so many years before by Mr. Pellett and Dr. Park. Would the stock be superior in honey production? Would it be resistant to American foulbrood? Would it be cross and racy, or even-tempered and quiet on the comb? Only time could tell—May, June, July, August, and part of September were to pass before the answers to all questions could be gathered together and a conclusive result given.

By mid-August there was a partial answer. The hybrid Italian stock was a better honey producing stock than the common stock which was used in check colonies. The hybrid stock was also gentle and showed more uniformity in colony production than did the check colonies. Part of the questions, then, were answered. But there still remained the problem of resistance. There was every reason to hope that this hybrid was also resistant, for tests of the inbred lines had shown an indication of 100% resistance. Colonies were tested with the comb insert method and more anxious days of waiting followed. Each colony was watched eagerly and carefully. Suspicious-appearing larvae were examined under the microscope and colonies which failed to show any traces of disease were re-tested with additional inserts of diseased comb. These efforts were well rewarded—the resulting bee was a high honey producer, was more uniform in its per colony production, was resistant to American foulbrood, and was gentle.

But had perfection been reached? By no means! Many years will pass before the perfect bee will appear —perhaps longer than the lifetime of any one individual investigator. A certain degree of success has been achieved—a success which has been possible not from these efforts alone, but because of the contributions and help of many others over a long period of time. The small success which has been achieved is not one to gloat over. Rather it is one to lend incentive to the desire to produce a still better bee—the desire to continue to serve the industry, to promote better beekeeping for the profit and pleasure of beekeepers everywhere.



This queen bee is marked on the top of the thorax with a quick drying enamel paint. The wings on the right side have also been clipped. No guess is possible with this identification. It is certain. Good queen too; large thorax, long plump body.

An apiary on wheels, from J. H. van Dijk, Bilthoven, Netherlands. From the flight openings, must be twenty-two colonies on the visible side; maybe twenty-two more on the far side.

Mrs. Woodrow Miller's camera almost secured evidence against her husband at the St. Louis meeting. Or is he just being courteous to Mrs. Killion? Anyway Carl is busy paying the bill. Poor guy!

In England's apicultural shows Miss Ironside is instructor and demonstrator.

●

The Cover Picture

Miss Nancy Ironside

Scottish Beekeeping Expert

THE woman we honor this month "started right with bees," as she began life on a small farm in East Aberdeenshire, Scotland, with bees below her in the garden and above her on the roof. From them she learned two lessons; that bees carefully tended in hives store much more honey than those left to their own devices; and that pastures helped by white clover and bees produced better prime Scotch beef for the London market.

After her early school days, Miss Ironside studied at the North of Scotland College of Agriculture in Aberdeen and the West of Scotland College at Kilmarnock, gaining diplomas in Agriculture and Dairying. But beekeeping was in her blood, and she worked hard, studying under Dr. Anderson whom she accompanied to Association meetings, and Dr. Rennie, the discoverer of the cause of Acarine.

For years she was Manager of the Duke of Buccleuch's Ayrshire herd and dairy, then she returned to Kilmarnock and received a diploma in Poultry Husbandry. After serving a short time as assistant at the Poultry School, Miss Ironside went to Warwickshire as Woman Adviser and Organizer of Agricultural Education for the County Council and assistant to the Director of Education. Part of her duties was to organize beekeeping instruction. She was, for all practical purposes, County Apiarist. Classes were very successful, and lectures were given on all aspects of beekeeping throughout the County. Centers of beekeeping increased as the number of students taking the examinations of the B. B. K. A. rose, and soon demonstration apiaries were started to improve beekeeping practices.

Miss Ironside was next elected Chairman of the Warwickshire Beekeepers' Association for two years. During 1946-1947 The British Broadcasting Council broadcast two series of talks on Agriculture and Beekeeping which were arranged and inspired by her—the microphone was taken to apiaries where current beekeeping problems and operations were discussed with the beekeepers in their own locations. The signature tune for this series was the strong hum of bees. During this time Miss Ironside was the organizer and driving force in the campaign against foulbrood in Warwickshire and was elected to represent the County Association on the Council of the British Beekeepers' Association

(Top left) Miss Ironside is jovial here about something. She seems like a person who enjoys every minute. (Top right) Nottinghamshire Beekeepers' Association meeting at Nottingham Municipal Apiary. (Photo by Nottingham Journal, Ltd.)

where she remains today a valued member serving on the General Purposes, Research and Examination Committees.

When the Central Government took all Agricultural Education into its own hands, Miss Ironside became a member of their staff and was moved to Lincolnshire where she was appointed Poultry Advisory Officer for the County. She still retains her apiary and a great part of her time is still devoted to helping beekeepers. She is keenly interested in the question of selective queen breeding. An excerpt from one of her letters describes an interesting part of a recent beekeeping convention which she attended: "Saturday night we saw several American films which everyone enjoyed very much — "Package Bees" and "Queen Rearing," both made in Georgia. Everyone was vastly interested in the 'slick' way the queen rearer cut the ripe queen cells from the frame. The gasp of surprise was worth hearing. None of us would dare treat a frame of ripe queen cells with such scant ceremony!"

And There Sets the Honey Crop

IT was a lovely evening and John, home from work, was back of the house in the bee yard. It had been a hot, muggy day, and black clouds were building up near the setting sun. What a day the bees must have put in! Big clusters of them festooned the hive fronts and there was a low murmur that seemed to resemble the hum of hidden machinery.

John sat on a box near the tree where he often watched the moods of his thriving apiary. Just a few months before the swing of hammer on nails had made those hives ready and a knowing express man had handed him the bees that now justified themselves in supers filled with white-capped comb heavy with the finest honey, nature's magic gift to man.

Into John's pleasant reverie, boomed the voice of his neighbor and friend, Mr. Miller, the old Bee Master. "That's a part of the reward John. It's not just the honey nor the money you may get for it, but it's closeness with an inner meaning that gets as near to the heart of things as man can possibly get in a material way. What are you cogitating?"

"It isn't as heavenly as you suppose" answered John. "I was just wondering what I should do next with these bees. Seems like this is a turning point into some job with which I may need your help."

Mr. Miller possessed the spirit of a true teacher. He knew when to let alone and when to help. This was the time to help. "The flow is about over, John. For a week or more the bees will continue to bring in some additional nectar but there will be plenty of room for it in the corners and edges. Don't add more room. For quickness in getting your honey off and in handling the crop, try to manage so each super is as solidly full as possible.

"You had better plan, this week end, to get all the honey off you can remove. The bees will still be busy enough in the field so they won't bother you by robbing when you try to get those supers off. Saturday afternoon I'll help you. It's a new part of your experience but quite simple. I'll get things all ready."

The day arrived and John was quite thrilled with the expectation of learning more about the handling of his bees from a master of the craft. Mr. Miller was ready as he promised.

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Discussion

Should we produce more comb honey to improve our markets? Interesting question. We summarize the replies.

Lloyd Kreklau,
Glendive, Montana . . . .

We should produce more comb honey by all means. I also intend to produce some cut comb which will be carefully weighed and wrapped and will be sold to the children. It will be in well-drained 3 oz. pieces, put into the freezer and sold for a nickel like a candy bar. It creates sales for both comb and liquid honey. Slogan—"There Is No Substitute for Comb Honey."

The bulk comb honey price is getting better and the small difference in total production is worth it if it improves the market for the sale of all honey. Do not overcharge. People resent it. I usually sell comb honey for 30 to 40 cents a section.

In the production of cut comb honey, I mix sheets of foundation between drawn combs in 6¼ inch depth supers. At extracting time we separate the cut comb from the extracting combs and put the uncapped cut comb back on the hives to be finished. One must have a fairly good flow to get the best results so after the season is advanced we do not try to produce more cut comb.

* * * *

Julius Lysne,
Stockholm, Wisconsin . . . .

There is a real demand for comb honey and beekeepers are making a mistake not to try to meet it. Giving the customer what he wants is a business principle few can ignore. In the minds of too many, honey in jars is just one more form of syrup. But their eyes light up at the sight of well filled sections of comb honey. Sell honey as a gift. What shall we take to Aunt Mary in the hospital? She has been given almost every type of present. Why, a nice section of comb honey of course! What could do her more good. Remember Grandpa with a gift of honey. Mother too is sweeter than the flowers. Why not take her a section or two of fine comb honey on her birthday? Just the time to add a nice jar of honey along with the comb. Do you go to Grandmother's for Thanksgiving? Why not take along the winter's supply of honey? A few sections of comb honey and a nice ten pound pail of extracted for pancakes is in keeping with Thanksgiving.

It is easy to build up sales once we have people's interest. The fascination of the honey comb is never ending. Build sales around comb honey.

* * * *

George Rehman,
North Baltimore, Ohio . . . .

To encourage greater production of comb honey unless the quality is improved will only further demoralize the market for both comb and extracted honey. I have had buyers say they could sell offgrade comb honey to foreign districts, a market wanting a bargain, so the buyer expected to secure this grade of honey at or below production costs. Other buyers write: "The comparatively little comb honey there was in 1948 was dark in color and far from fancy." "It is virtually impossible to get comb honey of the kind that makes people happy." No business can exist on single sales. A grade of comb honey must be produced that will bring repeat orders.

* * * *

A. A. Lyons,
El Monte, California . . . .

More comb honey should be produced. It is generally known that much more extracted is produced than comb. For comb honey the beekeeper must have different equipment. He must give more time and attention to his bees. He must also use his best working colonies for comb honey.

Much more comb honey could be sold than is now produced. On the market it must be well displayed and made tempting and attractive. If it is in glass cases, or wrapped in cellophane, and piled in an attractive manner, where it can be seen by all customers, it will sell. The display may be backed with a large colored picture of honey bees flying in a field of clover and that will also help sales.

* * * *

E. E. Salge,
Weslaco, Texas . . . .

I believe we should produce more comb honey, whether it is section or cut-comb honey; but I have my doubts that there will be any large increase in section comb honey because of the additional work required and because there are few places where the honeyflow is heavy enough to produce section comb honey successfully.

However, most beekeepers can produce some good quality cut comb honey, even where the flow is long and rather light, and without too much extra labor. The market will not be helped by its production alone however. The important thing is the proper packing of the product. We must put up a quality pack. I have seen cut comb honey in the store I would not eat if it were given to me.

We should use only the highest quality of new comb, fully capped. It should be clean cut and not have ragged edges and the comb should be the full length of the jar. In pails, the comb should be cut in squares as large as they can be laid flat in the container. In glass the comb should be as large as the jar mouth will permit. The extracted honey to fill the container should be as carefully handled as though it were to be sold as plain extracted honey.

The production of section honey and cut comb honey will help in several ways. Every pound sold as comb will be removed from the extracted class which is a slow seller. Also the comb is a more attractive product. Many people will not eat honey unless it is in the comb as they are afraid of not getting pure honey otherwise.

Some will buy just for the comb even if there is also extracted honey included. There are many people,

(Please turn to page 401)

Next Discussion WHAT CAN WE DO TO IMPROVE OUR PASTURE? So far we have just six contributions to this important subject, some from the same readers who have continuously done their best to make these discussions worth-while. Some of the rest of you see what you can do. The next succeeding discussion will be SHOULD QUEEN EXCLUDERS BE USED WITH TEN FRAME EQUIPMENT IN EXTRACTED HONEY PRODUCTION? (Suggested by John Lysne, Stockholm, Wisconsin.

American Honey Institute

The magic word, "television" can spell high-powered promotion. It already has for the honey industry!

Take for instance, the half hour program carried by WTMJ-TV on honey cookery on June 14—what could be better honey advertising?

With the aid of Mrs. Harriett Grace, director of the American Honey Institute, two expert home economists showed the televison audience how simple it is to make good foods when you cook with honey. To back up their claims they demonstrated the best method to mix the Institute's **Honey of a Chocolate Cake,** gave the recipe, and then dazzled their audience with the glorious finished product. Mrs. Grace stood before the television cameras to answer all questions on honey as a baking ingredient, and to show a copy of **Old Favorite Honey Recipes** as a sample of the recipe booklets that homemakers can get from the Institute office.

Mrs. Grace has been asked to appear again in the fall.

This is the kind of promotion that fills the dreams of every beekeeper, of every honey packer and retailer. With one television broadcast well impacted in the minds of the television audience, the honey industry has put its best foot forward. But now it must be followed with another step and then another!

* * * *

You beekeepers know, from past experience, that the job of selling honey falls on your own shoulders. Now the Institute offers you one more way to lessen the worry of shaky markets.

A revised booklet, **Honey Specialties for Bakers** is now ready to be shuttled from the supply rooms at the Institute to the kitchens of the bakers in your town. You are the middleman who must see that these booklets reach their destination. You can encourage the baking industry to bake with honey and—incidentally—to buy your honey.

The baking industry is a sometimes neglected outlet for large supplies of honey. Beekeepers are scattered all over the country; if these same beekeepers are earnest in their desire to reach new markets, bakers everywhere could be persuaded to use vast amounts of our golden product.

This goal, however, depends completely on you. If you as a beekeeper will see your baker, give him this complete and revised baker's book, and offer him a uniform, high quality supply of honey—the honey industry, and you in particular, will benefit.

Commercial State Bank Building, Madison 3, Wisconsin

When you give this book to your baker be sure you tell him these facts:

Honey Specialties for Bakers is revised and enlarged to fifty pages.

Honey Specialties for Bakers is composed of tested recipes that have been found acceptable by members of the baking industry as well as nationally known food concerns.

Honey Specialties for Bakers is made up of honey formulas that were contributed by General Mills, Pillsbury, and a baking specialist.

* * * *

Also of importance to the bakers of the country is a new streamer that the Institute has just put out. "Ummmmm! Baked With Honey!" it says. Then in smaller print—"So Delicious; Stays Fresh Longer." Every baker who uses honey will want one for his window; be sure he has it!

* * * *

"Honey and real yogurt . . . ." That's how a recent news release sent out by the Dannon Milk Products Company was headed. After weeks of letter writing and many conferences, the two industries, honey and real yogurt, doubled their promotional efforts by combining their two campaigns into one. The result was a Honey-Yogurt release sent out by the Dannon Company to all those newspapers and magazines on their mailing list.

The three recipes that were offered to newspapers were dessert recipes, designed especially for hot summer days.

More honey information and recipes were offered in the release to any homemaker who was interested in honey cookery.

This type of joint cooperation with other food concerns is the kind of work that earns the American Honey Institute the enviable reputation it has.

* * * *

Our own releases are certainly worth a second glance. The most recent of these monthly honey good will-spreaders was a feature article on honey for the bride of ancient times.

Shortly after the release was sent out, we received a note attached to a copy of the release back in the mail. Seems that a Florida radio station had used it word for word in a program called "Journal of the Air." And they liked it so much that they wanted us to know about it!

One newspaper headed its story on the release "Honey Determined Man's Future in Ancient Times." Another called it, "Practical Recipes for Honey Recall Traditional Romantic Lore." Many wrote thank-you notes for the material and asked for more.

* * * *

Two giant terms—honey publicity and consumer education—are fused together when you find them in a project as worth-while as 4-H club work.

No doubt many of you know of the bee projects sponsored by the nation's 4-H clubs. These projects point the flexible minds of rural youth toward the bee and its unique and fascinating way of life. Through these projects, boys and girls develop a healthful curiosity about the affairs of the hive; they unfold a new interest in the community affairs that affect the beekeeper and his bees.

But best of all, they learn that where there are bees, there is honey. And where there is honey, there is —or should be—a consumer!

Help the youth of America develop the honey-habit by encouraging these 4-H projects. See your county agent about what you can do. Offer your beeyard as a school room. Talk to these future adults and show them the details of beekeeping. Let them sample your honey.

You'll find that soon the 4-H'ers will develop a respect for your bees and your profession. But best of all, they will be awake to the goodness of honey!

* * * *

Everybody has to boast once in a while and the Institute is no exception. But we can't help but believe the sincerity of the letters we receive every day.

To quote only a few of the most recent:

"We have been receiving your releases and wish to thank you for

the helpful and interesting information they provide." (A Chicago food firm).

"I received your leaflet, 'Honey for Breakfast.' It is a very colorful pamphlet with interesting recipes. I would like to have a set to be distributed on this homemaking show." (A California radio station).

"Please change my address on your mailing list so that I may continue to receive your releases. Your material is very excellent." (A Connecticut radio station.)

"Three cheers for a beautiful television program. At least we think so at WTMJ-TV. Let's look forward to doing something at cookie time in the fall. Thanks a great deal for coming over and being with us." (Director of television at WTMJ-TV).

The people at our school lunch conference were most pleased to have the illustrative materials that you sent for distribution. My sincerest thanks to you." (Professor at State College of Washington).

And There Sets the Honey Crop

(Continued from page 397)

He had a rubber tired wheel barrow, a long, low bodied affair, that rolled easily over the grass. On the barrow were several cloths and some wood frames with cloth tacked on them and covered with tin, painted black. Some bottles and gloves seemed to complete the outfit.

"Removing extracting supers, especially shallow ones, is quite easy today. It used to be more of a task. By using chemically pure liquid carbolic acid we can drive bees out of their supers quickly. Sometimes too quickly, especially when it is hot and the sun beats on the hive tops. When it is cool or cloudy the acid does not fume as fast and it acts more slowly. The bees, as you know, have breathing pores and the acid vapor reaches into them and presumably irritates the bees so they try to get away from the supers to relieve the irritation. There is some trick to its use though. Let's try it."

Suiting words to action, Mr. Miller put on the gloves, and sprinkled the acid (which was diluted with water) onto the cloth of the acid boards. The acid was in a brown bottle with a clothes sprinkler top. "Don't want too much on; just enough to cover the cloth lightly. Always wear the gloves as the acid burns quickly. I keep a bottle of alcohol handy to rub on any spot on my arms or hands where I feel the burn of the acid. You can take off the gloves after the boards are prepared."

Using a puff of smoke, he placed a board, cloth down, on the top super of each of three colonies. "Likely three boards will be enough. We can use more or even less if the bees do not move out as we work." In just a few minutes he started taking off the shallow supers, setting them on the upturned cover of each hive as he worked. Soon he had all the supers off the three hives, except the bottom super of one colony and the bees were quietly clustered in the entrances.

"Don't drive the bees until they start flying wildly in the air. If you adjust the work and the number of boards properly, you can get all the honey off before the bees do more than cluster at the entrances. Now let's sort these supers. The one I have left on has some brood in it. Leave that until later. We'll have to put one full super back for the bees. If there are partly full supers we can leave each colony one of those for what flow remains. The rest we'll take."

Soon John caught on and together they loaded the barrow, covering the honey with the cloths, and wheeling the loads to Mr. Miller's honeyhouse they set the supers in drip pans, at the side of the room.

"Won't the acid make the honey taste bad?" asked John as he sniffed at one of the super stacks. "Smells pretty much like acid to me."

"Leave the supers uncovered for two or three days and you won't get even a whiff of acid. It is very volatile and is soon gone. Formerly carbolic acid was tried but then the acid available was crude and impure. Now it is so refined that it is entirely volatile and safe to use for our job."

"That's a nice lot of honey, John, especially from colonies started from packages. Reckon you have at least fifty pounds to most of the colonies. You did well."

"Thank you, Mr. Miller" John responded, "but it was you who did well and I will always be grateful."

"That's what we are here for. I had to learn once and I too had an old beeman to guide me. I'll feel well tonight that I could help you. See you tomorrow."

Discussion

(Continued from page 398)

especially the children who like to "chew the wax."

• • • •

Louis F. Cox,
Lexington, Missouri

While it has been years since I produced comb honey, I intend to produce as much chunk comb as possible this season. I am convinced that my retail market is slipping away from me and that I must make my come back with comb honey. All comb honey markets are sold out at good prices. Extracted honey must compete with low priced sirup. Comb honey creates confidence in the customer for both the comb and for the extracted honey.

• • • •

Nic. Klein,
New Hampton, Iowa . . . .

When we abandon comb honey we relinquish a luxury market in which our product is supreme. Even worse, we lose many extracted honey prospects, who, when they buy a "cake" of comb honey, find they like it and try the other, thus often continuing as regular customers.

In a way the comb honey producer is an artist. Starting to produce comb honey costs less than starting with extracted and those who stay with it learn more about bees than those who only produce extracted honey. I learned beekeeping the "comb honey way" and it was years before I produced extracted honey.

Why not do both at the same time, and on the same colony? It can be done and you get the finest comb honey, too. Use an N super, with 4¼x4¾x1⅜ sections and fence separators. The sections go into holders that enclose the sections on all four sides and both the holders and the fences hang in the hive rabbets just as the shallow extracting frames do and with which they are interchangeable.

No bait sections are needed as you place a shallow extracting comb built out the previous year, on the outside of each super, or two combs if you like, or alternate them, and your bees will start in the sections sooner than in all-section super. Too, the sections will only be in the spot where real prime sections are produced. The outside rows in full section supers are more often than not "culls" anyway.

CONGRATULATIONS—

TO THE SECOND PRIZE WINNER FOR HIS ANSWER TO THE STATEMENT

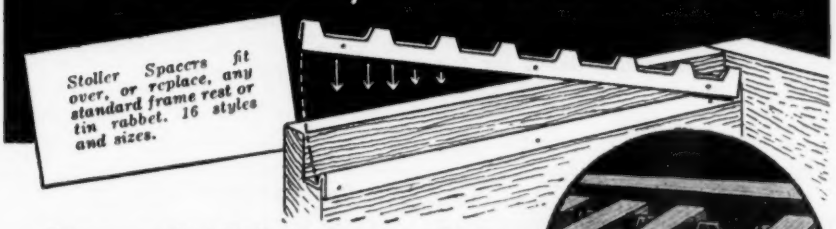
—I LIKE DR QUEENS BECAUSE . . . .

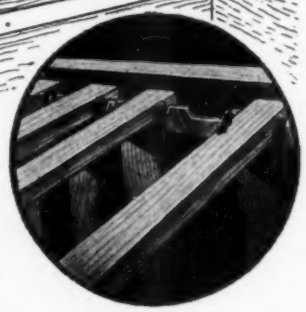
"I LIKE DR QUEENS BECAUSE THEIR DEPENDABILITY ASSURES PROFIT BY COLONY BUILD UP AND INSURES AGAINST COLONY LOSS BY QUEEN LOSS AT SUPERSEDURE TIME."

—CASS L. TIMMONS, Sr., Route No. 1, Bueshel, Kentucky.

IOWA BEEKEEPERS' ASSOCIATION
STATE HOUSE, DES MOINES 19, IOWA

You save ALL WAYS with the
STOLLER *Slip-on* FRAMESPACER





Step up profits! Stoller's all-metal, lifetime spacer permits 7-comb spacing in 8-frame hives; 8 or 9 comb spacing in standard hives, and 9-comb spacing for Dadant hives. Made to fit shallow, deep or Lewis V Supers. Get more wax and honey with fewer frames and less work. Avoid mashed bees, poor spacing. Easy to install. Tested and approved by profit-conscious producers. Write for literature and prices.

STOLLER *Honey Farms* LATTY, OHIO

✓ Bessonet's *Italian Queens* ✓

Check your hives this summer and fall and requeen with stock with universal appeal. We recommend the ASHURST mailing cage, but due to cost, add five cents extra per queen.

PRICES: 1-24 ..... 80c each; 25 up ..... 75c each AIRMAILED
LEWIS-DADANT BEE SUPPLIES—Discounts on large orders.

BESSONET BEE COMPANY Donaldsonville, La.

CAUCASIAN QUEENS

It is GOOD BUSINESS to requeen now, for PROFITABLE BUSINESS in 1950. Better requeen with Caucasians. They have proven more profitable in all areas.
For BETTER CAUCASIANS, sit down and order from this schedule.

Less than 10 at $1.00 each	25 to 49 at $ .85 each
10 to 24 at ..... .90 each	50 to 99 at .80 each

100 or more at $75.00 per hundred

THOS. S. DAVIS
Route 7, Box 3914 Sacramento, California
Breeding BETTER CAUCASIANS for more than twenty years.

If you buy or sell advertise in ABJ

ITALIAN BEES AND YOUNG QUEENS

PRICES

2-lb. pkg. with queen	$2.40
3-lb. pkg. with queen	3.00
Queens	.50

HOMAN BROS.
Rt. 2 Shannon, Mississippi

IN HEAT OR COLD · THE CRIMPS WILL HOLD ·

WEST COAST BEEKEEPERS
Buy Quality
Lewis-Dadant
Products
from
F. O. IRICK
609 S. H. St.
Tulare, California

QUEENS
45c

2-lb. packages	$2.50
3-lb. packages	3.50

HUBER FOREHAND
SATSUMA, ALABAMA
45 Years Among the Bees

MOORE'S STRAIN

Away back in 1879 I commenced rearing Italian queens with the object of improvement constantly in view.
By careful selection during all these years I have succeeded in producing a strain of three-banded, leather-colored Italian bees, known as MOORE'S STRAIN OF ITALIANS, which has won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. Send for descriptive circular and read reports from those who have tried them.
Untested queens, $1.00 each; 12 or more, 75c each.

J. P. MOORE, R. 3, Falmouth, Ky.
Former address, Morgan, Ky., U. S. A.
Safe arrival and satisfaction guaranteed.

A FAMOUS STRAIN OF
Light Colored Italians
PRODUCED AND SHIPPED BY
The Most Modern Bee Breeding Establishment On Earth.
The Daniels Apiaries
PICAYUNE, MISSISSIPPI

FOR BETTER BEEKEEPING USE DADANT'S FOUNDATION

ONE PAIR THAT CAN'T BE BEAT

Tapered Roller TIMKEN BEARING EQUIPPED

Although still limited in supply there are some Superior Lifetime Extractors and Capping Dryers still available.

Place your order immediately at any of our branches if you want to receive either of these machines for use this season. Either machine can be furnished without a motor or complete with motor and motor mounting.

SUPERIOR HONEY COMPANY

DENVER, COLO. 3759 Wazee St. | OGDEN, UTAH 349 Third St. | LOS ANGELES, CALIF. 5201 District Blvd. | IDAHO FALLS, IDAHO | PHOENIX, ARIZ. P. O. Box 3546

1949 Fall Price List

QUEENS
LABELS
EXTRACTORS
HONEY SERVERS
PLANES & KNIVES
CONTAINERS
CARTONS & CASES
STATIONERY
ODDS AND ENDS
BOOKS

See our new prices. A postal card will bring your copy now.

DADANT & SONS, Inc: Hamilton, Ill.

HONEY WANTED

White and water white only
Comb or extracted
Carload or less than carload

We will pay cash or trade for bees and equipment
Send us samples and quote best price

BABCOCK HONEY CO.

Box 126, Five Point Station,
Columbia 5, South Carolina

MANUFACTURERS OF BEEKEEPING EQUIPMENT.
PRODUCERS OF QUALITY BEES AND QUEENS.

Previews of Coming Events

Beekeepers Meeting, Summer Conference, Purdue University, Lafayette, Indiana, August 4

8:30-11:30 A. M. (C.S.T.)—Field meeting at D. G. Rutherford Apiary, located about two miles N. W. of Brookston, on Grace Evans Farm. Gerald L. Hodson, Chief Apiary Inspector, Indianapolis, presiding.

Demonstrations of manipulating hives and handling bees. (By Indiana Deputy Inspectors).

Demonstrations of gadgets and special equipment. (By Indiana Beekeepers).

11:30 A. M.—2:00 P. M. (C.S.T.)—Basket dinner at Rutherford Apiary. For those who wish to bring their own lunch.

How to get to the apiary—Turn west from road 43 about ¼ mile north of the north edge of Brookston, then turn north on the first road (about one-fifth mile) and go about 2 miles to apiary site.

2:15-4:15 P. M. (C.S.T.) Horticulture Building, Room 117. Beekeeping Supplies and Equipment Show.

Agricultural Building, Room 207—W. Clyde Hudson, President, Indiana State Beekeepers Association, Evansville, Indiana, presiding.

Getting the Most From Your Bees—G. H. Cale, Editor of American Bee Journal.

Use of Honey Plants in Indiana Pasture Mixtures—G. O. Mott, Purdue University.

Pollination—An Agricultural Practice—G. H. Cale.

North Carolina, Raleigh, August 9-11

The North Carolina State Beekeepers' Association will hold its summer meeting, during Farm and Home Week at State College, Raleigh, August 9, 10 and 11, with both morning and afternoon sessions. A good program is being arranged that will include George H. Rea, one of the Deans of Eastern United States Bee-Culture. There will be field trips and apiary demonstrations each afternoon. This gives promise of being a popular and profitable meeting, as all other branches of agriculture will have programs at this time. The present arrangement has not been used for some years and its continuance will depend on the support the beekeepers give as shown by their attendance at the meeting.

Interested parties are requested to write directly to the Agricultural Extension Service, State College, Raleight, N. C. and ask for a free program.

Ohio Summer Meeting, Kelleys and Pelee Islands, August 10-11

The summer meeting of the Ohio Beekeepers will be a joint meeting with the Ontario Beekeepers at Kelleys Island, August 10, and at Pelee Island, August 11.

Transportation to the Islands will be furnished by the Neuman Boat Company. Boats will leave the Neuman Dock, Sandusky, Ohio at: 7, 9:30 and 10 A. M. on August 10 for Kelleys Island. On August 11 the special boat for Pelee Island will leave the Neuman Dock, Sandusky, Ohio at 8 A. M., and at Kelleys Island at 9 A. M.; returning from Pelee Island at 5 P. M.

Timely and current topics pertaining to the prevailing problems in beekeeping will be discussed. A new feature will be a "panel discussion" on the probable future of the beekeeping industry. Demonstrations at the Bee Breeding Laboratory, and the final event—"Fish and Chips" will make an interesting and profitable meeting.

Preliminary Program
(Subject to Change)

August 10, 1949, Kelleys Island
W. T. Gran, Jr., Presiding

8:00-10:00 A. M.—Registration and Assignments. Welcome to Kelleys Island—Hon. P. M. Beltz, Mayor. Address—W. T. Gran, Jr., President Ohio Beekeepers' Association. Appointment of Committees and Announcements. Subject to be announced—Dr. C. L. Farrar, In Charge of North Central States Bee Culture Laboratory Madison, Wisconsin. Address—Dean Leo. L. Rummell, College of Agriculture, Director, Ohio Experiment Station. The Honey Market Reporting Service—J. C. Keller, U. S. D. A., Fruit and Vegetable Branch, P. M. A., Washington, D. C.

Panel Discussion—"The Future of Our Industry"—Moderator, Chas. A. Reese. The National Point of View—Roy A. Grout, President A.B.F., Hamilton, Illinois. The Honey Producer—E. W. Long, St. Paris, Ohio. The Honey Packer—L .C. Gardner, Delaware, Ohio. The Supply Manufacturer—Alan Root, Medina, Ohio. The Economist—Dr. Mervin G. Smith, Extension Economist, Agricultural Extension Service, O. S. U., Columbus, Ohio.

Demonstration—Queen breeding, instrument insemination, grafting—Dr. Otto Mackensen and Dr. Wm. C. Roberts.

4:30 P. M.—Fish and Chips.

Evening—Business meeting of the Ohio Beekeepers' Association.

August 11, 1949—Pelee Island

Boat will leave Neuman Boat Dock, Sandusky, Ohio at 8:00 A. M.,—Eastern daylight saving time; Kelleys Island at 9:00 A. M. Boat will leave Pelee Island at 5:00 P. M.

An interesting program has been arranged by Prof. Gordon F. Townsend, Ontario Agricultural College, Guelph, Ontario.

Illinois State Fair, Springfield, August 12-21.

An invitation is extended to all beekeepers everywhere to attend our Bee and Honey Show at the Illinois State Fair this year. The fair is in Springfield and the dates are August 12-21. Each year we have a Beekeeper's Day and visitors from far and near show up this day to scrape the propolis off their shoes and enjoy the fair. Each year we take advantage of Governor's Day to have our own Beekeeper's Day. This year the date is August 18th.

Hi! Ho! Come to the Fair!

Carl E. Killion,
Supt. of Bees and Honey.

Empire State (N. Y.) Schenectady, August 13

The Empire State Honey Producers' Association will hold its Annual Picnic and Get-together, August 13 at the home of Mr. George Walthousen, Schenectady, New York, as guests of the Eastern New York Association. All beekeepers, their families and friends, are invited. Sandwiches, coffee, etc., will be served.

This meeting gives you the opportunity to meet beekeepers from all sections of our state, also to get first-hand information about crop and market conditions.

Instructions: Go West on Route 159 at So. Schenectady to Kelley Road—about 6 miles. Poster at this point will show you where to go. For further details contact E. T. Cary, 1112-14 Erie Blvd., E., Syracuse 3 New York.

E. T. Carey.

Pennsylvania Field Day, State College, August 20

Forty-sixth Annual Program of the Penna. State Beekeepers' Association Field-Day and Picnic to be held at State College Campus Picnic Grounds, August 20, 1949:

Registration—9:30 to 10:00. President William G. Singer, Norristown, President. A Word of Welcome—Dr. M. A. Harrell, Asst. Director of Agriculture, State College.

Review of Inspection Work of the Season—H. B. Kirk, Senior Entomologist, Harrisburg, Pennsylvania. Report of Research in Agriculture—Dr. M. Harrell. Fall Management—W. W. Clarke, Jr., Extension Apiarist, State College. Beekeeping in Virginia—Dr. George H. Rea, Reynoldsville, Pennsylvania. Marketing Problems Confronting Today's Beekeepers—Harold J. Clay, Fruit and Vegetable Branch, Production and Marketing Administration, Washington, D. C. Research in Beekeeping at the College—Dr. E. J. Anderson, Prof. of Apiculture, State College.

Basket Lunch—12:00—Light refreshments will be served by the Centre County Beekeepers' Association. The afternoon will be given over to games and contests in charge of Prof. E. J. Anderson. Prizes will be awarded to the winners which are donations from various beekeeping supply houses. The prizes will be on display at the meeting. The Field Day will follow the Beekeepers' Short Course at the college which will be held August 15 to 19.

H. M. Snavely, Sec'y-Treas.
Penn. State Beekeepers' Assn.

New Jersey Picnic, Long Branch, August 20

The annual seashore picnic and swim will this year be held at the home and apiary of Walton Shaw, 456 Westwood Avenue, Long Branch, New Jersey, on August 20th. The meeting starts at 10:30 A. M. and there will be bee discussions and the afternoon will be devoted to recreation. It is hoped that the attendance will be as large as that of the recent meeting held July 16th at the Log

Cabin on the Experiment Station farm, New Brunswick, where Doctor Frank McLinn spoke on food technology and Dr. Wm. Martin, Dean and Director of the Station spoke. Professor Robert S. Filmer and Dr. Bailey B. Pepper of the Department of Entomology also presented talks.

Milton H. Stricker, Sec'y-Treas.
New Jersey Beekeepers' Assn.

Westchester County (N. Y.) August 21,, Portchester

The Westchester County Beekeepers' Association will hold its regular monthly meeting at 2:30 P. M. on Sunday, August 21, 1949, at the home of Mr. and Mrs. Alfred F. Roth, 146 Oak Street, Portchester, N. Y.

Following a short business meeting, the usual practical demonstrations of hive inspection will be given by the Mutual Assistance Committee.

Refreshments will be served and all interested visitors are welcome to attend.

B. F. Miller, Publicity.

Vermont Picnic, Alburg Springs, August 27

The annual Vermont Beekeepers Picnic Meeting will be held August 27th, 1949 at 10:00 A. M. The place is the residence of Mr. and Mrs. Charles Barozzi, Alburg Springs, Vermont. Our guest speaker will be Dr. Tim Dyce of Cornell University. All beekeepers, their family and friends both from Vermont and outside of the state are invited to attend. Don't forget to bring samples of the new crop honey, new honey plants and any appliances that might be of interest.

Chas. Mraz, Secretary,
Vermont Beekeepers Assn.

Minnesota State Fair, August 27 to September 5, State Fair Grounds

Five hundred dollars in premiums are offered for the apiary division. C. D. Floyd is superintendent. Demonstrations in the handling and management of bees will be given each day. The State Apiary Department will also have an educational display. Exhibit classes include honey, bees, beeswax, honey products.

The Indiana State Fair—Sept. 1-9

The dates for the Indiana State Fair are September 1 to September 9, inclusive. We hope to have a number of exhibitors in the Apiary Section. Your secretary will be in charge and we also hope to have an association booth where visiting beekeepers sit down and visit. If you wish to place an exhibit and have not received a premium list, drop a post card to The Indiana State Fair Board, Fairgrounds, Indianapolis.

Thirteenth International Beekeeping Congress, Amsterdam, August 22-27

This congress hopes to effect the establishment of a World Federation of Beekeepers and there has been much support promised for the venture. The program includes: lectures and discussions, scenic trips through Holland.

Virginia Short Course, Blacksburg, September 12-13

Our annual state beekeepers' short course will be held at V. P. I., Blacksburg, Virginia, September 12 and 13. Speakers on the program will include George H. Rea, Bee Specialist, Blacksburg, Va. Harold Clay, Production and Marketing Adm., U. S. D. A. W. A. Stephen, Bee Specialist, N. C. State College, Raleigh, N. C. E. J. Anderson, Bee Specialist, State College, Pennsylvania; Dr. J. M. Grayson, Professor of Entomology, V. P. I., Blackburg, Va. M. J. Deyell, Gleanings In Bee Culture, Medina, Ohio. H. L. Maxwell, Beekeeper, Berryville, Va. Henry W. Weatherford, State Bee Inspector, Vernon Hill, Va. Rev. F. M. Dick, President, Virginia Beekeepers Association, Brookneal, Va., and J. O. Rowell, Extension Entomologist, V. P. I., Blacksburg, Virginia.

J. O. Rowell,

Northwestern Pennsylvania, August 31, Canadohta Lake

The annual Northwestern Pennsylvania Beekeepers field day and picnic will be held on August 31 at Canadohta Lake, Crawford County, south of Union City near Route 8.

I. L. Barton, Pres., Crawford
County Beekeepers Association.

Los Angeles County Fair, Pomona, September 16—October 2

The apiary department at the Los Angeles County Fair in Pomona, September 16 through October 2, will again be a major attraction. Under the direction of George Adamson there will be a comprehensive display of bees and their products. It is divided into thirty eight classes detailed in the premium book—among them bee clubs, extracted and comb honey exhibits, beeswax, honey uses, including baked goods, candies, and preserves, 4-H and Future Farmer departments.

Shallow Super Colonies Work!

(Continued from page 383)

front. New queens do not ordinarily swarm and are more prolific so swarming gives little trouble. I requeen every year and clip every queen.

One does not need queen excluders unless the colonies are supered too soon. For the occasional queen that goes on a rambling spree, it is a simple matter to acid-board her down and when taking honey, take a quick glance up through the bottom bars to see which combs have brood. Put those down in the brood nest.

I have found that colonies of this type winter better. I leave the bottom entrance open, invert another bottom on top to allow a top entrance, then pack. The shallow combs provide better crossovers so the bees are not marooned by cold mere inches away from plentiful honey.

As to the disease hazard of interchanging combs, it is no greater than with any other kind of equipment. You can't keep bees with foulbrood anyway. There are more combs of brood to look over but they may be examined quickly and need fewer inspections. Present methods of preventing and controlling foulbrood are so effective that the time consumed in inspections is a minimum.

The objection is given that the shallow super method costs more to start. Yes and no. It does cost more than the full depth Modified Dadant brood hive because there are 22 frames to buy and nail against 11, but it costs less than the Langstroth double brood chamber of ten frames each. The shallows, with the tight bottom, are used for brood clear to the bottom, while the lower hive of the so-called standard system is half empty.

There are twice as many sheets of foundation to buy and install but there are very few replacements. The shallow combs are real sturdies.

Such a set-up may be of little interest to a large operator who is systematized some other way. The change over cost may be greater than the gain. But a small producer or a beginner can adapt it to his needs. Deep combs or hives can be run through a saw and cut to the 6⅝ inch shallow size. Any assorted equipment may be unified. This plan is not final. Tomorrow someone may suggest another that is an improvement.

——— Minnesota—Georgia.

Classified Advertisements

BEES AND QUEENS

QUEENS—QUEENS—Best of quality. Three Banded Italian, select untested, $1.00 each, 1 to 25; 25 up, 80c each. Health certificate with every order. Alamance Bee Company, Geo. E. Curtis, Mgr., Graham, North Carolina.

ITALIAN QUEENS raised for honey production, 75c each. Kirkwood Apiaries, Bristow, Oklahoma.

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of honey I have reduced prices. At lower prices I am still raising queens from stock of 250 up to 300 lbs. average production. Drones for mating come from similar colonies. Requeen this fall with my queens. 70c ea., any amount. Inspection certificate.
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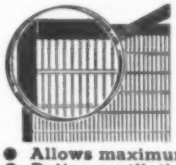
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American Bee Journal
Hamilton, Illinois

Crop and Market

M. G. Dadant

The Florida orange honey crop has not been nearly so large as last year. Other crops fairly satisfactory. Reports conflicting. Extending up the coast there has been a short crop through Georgia, South Carolina, North Carolina, but recent indications are that later flows are developing satisfactorily. Virginia, Maryland, and surrounding areas had a wonderful flow from clover, much better than a year ago. Alabama and Mississippi report satisfactory crops, as also do Kentucky and Tennessee with Louisiana about equal of last year and Texas much better than its 1948 crop. Arizona and New Mexico probably will not equal last year.

The northeastern states have been exceedingly unfortunate in that they have had very dry weather over a long period. This has affected all of the New England States, New York and some parts of Pennsylvania and even into eastern Ohio. The crop, therefore, in those sections is much less than a year ago.

Beginning at central Ohio and extending as far as the Plains States and to the northern border reports are that the crop is far ahead of 1948 which was practically a failure. The little white clover has boomed this year and more sweet clover and alsike have been seen than in many years. Beginning with fine productive flows from dandelion and fruit bloom it seems like everything in this area has yielded during the present year and even as this is written, July 15, the honey is still raining from the combs showing that the flow is continuing in our own vicinity.

Conflicting reports come from the Plains States of Nebraska, Kansas, and into Oklahoma, and ever farther north into the Dakotas. The crop has not been as good so far as last year but rains have been satisfactory. In fact, probably rains have interfered. The intermountain sections in the southern parts apparently are under last year with the conditions in northern Wyoming and Montana being about equal and perhaps in Idaho a little better.

Farther west, conditions are about as last year. On the Pacific Coast the crops have not been as satisfactory as last year. Orange was a partial failure and the succeeding crops were not good except some sections north of Los Angeles where some crops were in excess of 1948. Washington and Oregon report perhaps as much as last year, although not likely.

Prospects

Much of the territory in the New England States and New York, and this applies as well for Ontario and Quebec which have been dry, cannot expect too much from the late flows. The southeastern states may profit through rains and later flows. It is quite evident that the later flows may develop in all of the north central areas. Corn fields in many cases are full of heartsease and Spanish needle as very little of it is being destroyed by spraying from the fact that the corn is already far ahead of the weeds. It is going to be a question with many beekeepers whether they can get off the light honey before the dark honey starts if present conditions continue.

Favorable conditions apparently are also evident in the northern border states and extending into the Plains areas. The crop so far has been comparatively short. The intermountain states are similarly located with fair prospects for the balance of the season. The Pacific coast states cannot hope to make up the shortage of the crop so far.

In the southern states conditions are about normal although there has been spraying of cotton owing to heavy infestations of boll weevil and many beekeepers are losing bees or having to move completely out of the cotton areas.

Honey On Hand

The contract for the school program of honey has done a lot to relieve the situation on honey left on hand. Many of the big packers have been able to clear large quantities of honey and with local beekeepers there is usually not much left on hand. This applies particularly to all of the South, the northeastern states and extending into the central west which, of course, had a short crop last year. There may be some beekeepers with a large quantity on hand in the intermountain areas and in California but we have not heard of it if there are. We doubt there is more than ten per cent of last year's crop left and perhaps much less than this. In the Southeast, not only is all of the old honey cleaned up, but people are bidding for the short crop of new bulk comb.

Local Efforts

Everyone is agreed that there is going to be far more effort to sell honey locally than there has been for a long time. This does not mean that many of the members of co-ops are leaving them. In fact, the situation seems to be stable in that respect, providing the present cooperative pools can work out satisfactorily.

It is evident, however, that the beekeepers who during the heavy years were inclined to sell in bulk are now again considering their own markets. Also it is always true that when there is a good to heavy crop in one section the random swarms and talk about honey does put honey into the minds of the consuming public and is often an opportunity for disposing of the crop.

The southern states, undoubtedly, will not have enough bulk comb for their consumers and the tendency is to buy extracted outside and go entirely for bulk comb. Even then there is already a search on hand for bulk comb wherever it is available.

In the more northerly states there has been a turn back toward comb honey to some extent but unless the flow has been good there may be many unfinished sections in some parts of the country especially with beekeepers who are not acquainted with comb honey production. It does look like comb honey is going to sell readily and will be of high grade where the flow has been as it has in many sections of the Central West.

Canada, of course, has a nice carryover of perhaps 20 to 25 per cent of their huge crop of last year but the short crop this year extending clear across as far as British Columbia may help a lot to alleviate the situation. All in all, with less bees and short crops in some sections it does not look like the total crop this year would be in excess of last year's more than 200,000,000 pounds.

Honey Wanted— Cars and less than cars. TOP PRICES
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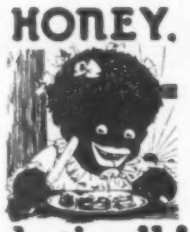

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The Postscript

Frank C. Pellett

An interesting note concerning heron's bill or pin clover **(Erodium cicutarium)** comes from Roscoe E. Johnson, of Barre, Massachusetts. He reports that it started blooming on April 22 and that in his locality it continues until about October 5. Although this plant is quite generally distributed in New England and southward to New Jersey we hear little of it as a honey source except in California. The sugar content of the nectar is very high and it is reported as the source of surplus honey in California.

H. B. Howell, superintendent of the Astor Experiment Station at Astoria, Oregon, was a recent visitor to our test garden. We were especially glad to see him because of some very valuable work with legumes on acid soil at his station. He has recently issued a bulletin on big trefoil which spreads by underground rootstocks. Although the bird's-foot trefoil does very well for us, the big trefoil is a failure here. Our winters are too severe and our soils too alkaline. Mr. Howell reports that the honey bees work the blossoms of big trefoil very eagerly and that the honey is of very fine quality.

Apparently the big trefoil is like the bird's-foot trefoil in that it is almost entirely dependent upon bees for pollination. Such information as is available indicates that the yield of honey from both species increases westward as is the case with sweet clover. Reports from the state of New York tell of much smaller yields of honey from trefoil than come from Minnesota or Oregon. While the bird's-foot trefoil succeeds in the northern states, the big trefoil will not endure severe cold, so is better adapted to the south and the mild coastal areas of the northwest.

It is interesting to note the preference of butterflies for special flowers. On May 27, the painted lady butterfly was swarming over the flowers of the Persian catmint, **(Nepeta mussina)**, while the red admiral butterflies were very numerous on the Peking cotoneasters. At the same time there were more swallowtail butterflies sipping nectar from the blossoms of the beauty bush (Kolkwitzia), while the sulphurs were common on the meadow sage **(Salvia pratense)**, with a few of them to be seen on other flowers. Honey bees were very numerous on all these blossoms. An occasional butterfly of each species was to be seen on other flowers, but the greater number showed an obvious preference for the special favorite.

There are several species of ragwort or butterweed, **(Senecio)** in this country, but we seldom get reports of honey from them. Groundsel is another common name but squawweed is even more general.

John C. Dods of Troy, Kansas, reports that Senecio aureus covers the sandbars under willow trees on lowlands near the Missouri River and that he has observed the bees covering it during most of the day. A flow of dark honey comes in late May and early June and sometimes as much as 60 pounds surplus is stored. The honey is very fragrant and of agreeable taste.

F. N. Howes reports that in Great Britain there is a variety of ragwort known in Scotland as "Stinking Willie" which is a troublesome weed in meadowlands. It is attractive to the bees, but unfortunately the honey like the plant is strong flavored, almost bitter and liable to spoil other honey.

Little information is available as to the quality of the more than 20 other species common to America.

Louis F. Cox of Lexington, Missouri is making some extensive trials of new plants. He reports good success with purple loosestrife on wet land. He finds that the bees work meadow sage very heavily and regards it highly for planting along highways for bee pasture. Sweet clover is disappearing from his neighborhood as it is from many others. The bees work lespedeza bicolor heavily but he is a bit too far north to mature seed except in unusually favorable seasons.

There has been a great increase in the number of bumblebees in this vicinity in the past two years. On June 5, I counted 146 on one short row of Jerusalem sage and there were probably more which I failed to see. They were present in similar abundance on other flowers in bloom at the same time. After nightfall, when the bees are no longer visiting the flowers, there are thousands of moths of many species. A big variety of nectar yielding flowers brings a similar variety of insects. The pawpaw butterfly was a rare visitor to this neighborhood until we planted the pawpaw trees. Now that there is a nice clump of them the butterflies have become quite common.

Glenn Owen Jones, son of our Federation secretary, now associated with Newman Lyle, was a fun loving youngster. When he was a schoolboy in short pants I taught him how to recognize the drones among the bumblebees and wasps. The result was a surprise not only for me but for others as well, as he delighted in taking them to school to frighten the girls out of their wits much to the annoyance of his teachers. It provided a complicated problem since he was a diplomatic youth not inclined to carry his pranks far enough to require personal discipline. You may be sure that there are teachers in the Atlantic schools who will never forget Glenn Owen.

The figwort, **(Scrophularia marilandica)**, has long been famous for attraction for the bees. It was widely distributed among the beemen of the eighties under the name "Simpson Honey Plant." Wherever the flowers appear they are likely to be swarming with bees. It blooms for a long season in late summer. Three related species from Europe are growing in the test garden. They do not grow as tall as our American form and come into bloom much earlier. The bees are busy on their flowers in late May and early June before the native species is more than half grown. They appear to be equally attractive to the bees and greatly extend the season.

Atlantic, Iowa.

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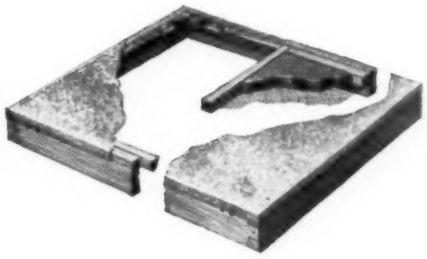

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